SOIL PILE CLOSURE CERTIFICATION REPORT
CONTACTS METALS WELDING, INC.
70 SOUTH GRAY STREET
INDIANAPOLIS, INDIANA
EPA ID NO. IND 089 263 412

SECOR Job No. R0054-001-01

Submitted by:

SECOR International Incorporated
8770 Guion Road, Suite B
Indianapolis, Indiana 46268

for:

CMW, Inc.
70 South Gray Street
Indianapolis, Indiana 46201

February 18, 1997

SOIL PILE CLOSURE CERTIFICATION REPORT
CONTACTS METALS WELDING, INC.
70 SOUTH GRAY STREET
INDIANAPOLIS, INDIANA
EPA ID NO. IND 089 263 412

SECOR Job No. R0054-001-01

Submitted by:

SECOR International Incorporated
8770 Guion Road, Suite B
Indianapolis, Indiana 46268

for:

CMW, Inc.
70 South Gray Street
Indianapolis, Indiana 46201

February 18, 1997

CLOSURE CERTIFICATION STATEMENT

The hazardous waste management unit at the facility described in the closure plan has been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible forgathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

IND 089 263 412
U.S. EPA I.D. Number

Contacts Metals Welding, Inc.
Facility Name

Howard D. Johnston
Signature of Owner/Operator

Howard D. Johnston, President
Name and Title

Gregory B. Byer
Signature of Registered P.E.

Gregory B. Byer, Indiana PE No. 890363
Name of P.E. and Registration Number

2/18/97
Date

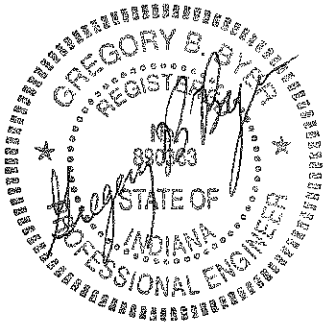


TABLE OF CONTENTS

Section **Page**

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

SOIL PILE CLOSURE CERTIFICATION REPORT
CONTACTS METALS WELDING, INC.
70 SOUTH GRAY STREET
INDIANAPOLIS, INDIANA
EPA ID NO. IND 089 263 412

1.0 INTRODUCTION

The purpose of this document is to provide written documentation and certification of the closure of two soil piles located at the Contacts Metals Welding, Inc. ("CMW") facility in Indianapolis, Indiana (see Figure 1 for Site Location Map and Figure 2 for a Site Map). The soil piles were found by the Indiana Department of Environmental Management ("IDEM") to contain the listed hazardous waste designated F001 (chlorinated solvents), and under a Consent Agreement and Final Order with the U.S. Environmental Protection Agency ("U.S. EPA"), CMW was required to close the soil piles as a hazardous waste management unit. The Closure Plan prepared by SECOR International Incorporated ("SECOR") dated January 5, 1996, incorporated herein by reference, was approved, with modifications, by the Indiana Department of Environmental Management ("IDEM") on June 27, 1996 (see Appendix A for approval letter).

The two soil piles were generated in 1989 as discussed in the Closure Plan, and this closure certification specifically addresses the closure of these two soil piles only. The 1989 cleanup activities which generated the soil piles were done under an IDEM-approved Sampling, Analysis and Cleanup Plan ("SACP"). The SACP excavation activities did not completely reach the limits of volatile organic compound (VOC) impacts present in the subsoils. Approximately 400 cubic yards of VOC impacted subsoils were excavated and stockpiled near the southern limit of the excavation where it is believed, at least in part, unexcavated VOC impacted subsoils exist. It is of critical importance to CMW to draw a distinction between the older, pre-existing VOC impacted subsoils and any post-excavation impacts caused by migration of VOCs from the soil piles into the subsoils. Thus, although this closure certification addresses the closure of the two soil piles with this distinction made, it should be noted that the pre-existing contamination will be addressed as a separate matter (see Section

6.0). CMW will submit a modified SACP to address the pre-existing VOC impacts within sixty (60) days of the date of this closure certification (a letter dated February 22, 1996 communicating this schedule is found in Appendix B).

The following closure certification report has been prepared in accordance with closure certification procedures contained in the IDEM's March, 1994 "Hazardous Waste Management Unit Closure Guidance".

1.1 Chronological Summary of Closure Activities

The key closure activities consisted of applying for and receiving Special Waste disposal approval for the soil piles, selecting a waste hauling contractor, removal and disposal of soil piles, drilling and sampling of randomly selected boring locations, chemical analysis of subsoils, validation and interpretation of analytical data, and preparation of this report. Table 1 is a chronological summary of the closure activities which occurred between June 27, 1996 and February 18, 1997.

Table 1. Chronological Summary of Closure Activities

Event	**Date(s)**
Approval of Closure Plan	6/27/96
Special Waste Application	
soil pile sampling	7/30/96
waste characterization analysis	7/31-8/26/96
preparation and submittal of Special Waste application	8/27-8/29/96
receipt of Special Waste approval	10/3/96
Selection of Contractor for Soil Pile Removal, Transport and Disposal	
solicitation of bids	8/29/96
selection of contractor	9/6/96
Removal and Disposal of Soil Piles	10/9-10/12/96
Sampling and Analysis of Subsoils	
determination and layout of boring locations	10/4-10/15/96
drilling and sampling of subsoils	10/15/96
analytical testing of soil samples	10/16-11/12/96
resampling for duplicate analysis	12/6/96
analytical testing of duplicate samples	12/7-12/19/96
validation of analytical data	11/5/96-1/2/97
Interpretation of Data and Preparation of Certification Report	12/1/96-2/14/97
Submittal of Certification Report	2/18/97

2.0 SOIL PILE REMOVAL AND DISPOSAL

Photographic documentation of the soil removal activities are contained in Appendix C. In 1989, the two soil Piles (Pile 1 to the west near the excavation and Pile 2 to the east away from the excavation, see Figure 2) were placed on visqueen plastic sheets (Photograph 1), covered with visqueen sheeting (Photograph 2), and later covered with heavy nylon-reinforced tarps (Photograph 3). The tarps were maintained until the piles were removed in October, 1996. Pile 1 had been placed on a pre-existing concrete pad (Photograph 1) and Pile 2 had been placed on the ground surface which consisted of cinder fill from an old railroad spur with many cross ties still in place (Photograph 4). The main objective of this closure was to remove the soil piles, covers, and associated debris and dispose of the waste as a Special Waste at Twin Bridges RDF in Danville, Indiana as stated in the Closure Plan. Although the soil was considered by IDEM to be a listed hazardous waste with the waste code F001, allowance was made for the disposal of the soil as a Special Waste through a risk assessment prepared by ATEC Associates, Inc. ("ATEC") and reviewed by the U.S. EPA. The IDEM received the U.S. EPA's review comments and concurred that the soil piles no longer contained hazardous waste.

SECOR, on behalf of CMW, completed Special Waste application activities in July and August, 1996. Soil samples of the piles were collected and analyzed per guidance from the IDEM Special Waste Permit Section and with additional input from technical personnel at Twin Bridges RDF. The Special Waste Application and analytical results were submitted to the IDEM on August 29, 1996. Special Waste disposal approval was received on October 3, 1996 for the disposal of the soil piles at Twin Bridges RDF as "excavated soils containing less than 50 ppm PCBs". A copy of the Special Waste Certification is found in Appendix D.

After solicitation of bids from three qualified contractors, CMW selected Central Environmental Contractors, Inc. ("CEC") to load and transport the soil piles to Twin Bridges RDF. From October 9 to 12, 1996, CEC loaded and hauled the two soil piles associated debris

to Twin Bridges RDF without incident. The loading was conducted using a front loader and hauling was performed with covered triaxle dump trucks (Photograph 5). Loading was performed from east to west, starting at the east end of Pile 2 (Photograph 4). In all a total of 32 loads were hauled to Twin Bridges RDF over a three day period with a total haulage weight of 595.22 tons (approximately 440 cubic yards). Table 2 is a listing of the individual loads hauled to the landfill. The front loader was used to remove the piles flush to the ground surface which is concrete for Pile 1 (Photograph 6) and black cinder fill with cross ties for Pile 2 (Photograph 7). As stated in the Closure Plan, the loading equipment was decontaminated and the rinsate and debris were placed in a steel drum for proper disposal (Photograph 8).

Table 2. Summary of Soil Disposal Information

Sequential Load Number	Twin Bridges RDF Reference Number	Disposal Date	Quantity Delivered (tons)
1	423381	10/09/96	22.41
2	423394	" "	16.75
3	423398	" "	19.46
4	421578	" "	17.11
5	423411	" "	16.54
6	421592	" "	16.83
7	421643	" "	16.84
8	421663	10/10/96	18.45
9	423461	" "	18.75
10	421699	" "	14.99
11	421714	" "	14.06
12	421717	" "	17.53
13	421730	" "	20.69
14	421738	" "	20.47
15	421749	" "	21.11
16	421751	" "	18.59
17	421765	" "	19.13
18	421783	" "	17.76
19	423494	" "	18.66
20	421805	" "	20.55
21	421822	" "	21.11
22	421834	" "	18.10
23	421853	" "	20.93
24	421860	" "	20.16
25	423512	10/11/96	19.69
26	421972	" "	17.86
27	421921	" "	17.46
28	421923	" "	18.30
29	421924	" "	19.85
30	421970	" "	21.31
31	421971	" "	13.91
32	421977	" "	19.86
Total Quantity		**Tons**	**595.22**
		Cubic Yards (est.)	**440.90**

Once the piles were removed, the Closure Plan stipulated that further removal of soil would occur if impacts attributable to the soil piles were found to be above the risk-based levels stated in the Closure Plan for the seven chemicals of concern (COCs)[1]. Sampling and analysis of the subsoils was conducted to make this determination. The specific findings of the sampling and analysis activities are discussed below.

---

1 Per the Closure Plan the seven chemicals of concern known to be present in the soil piles are chloroform, 1,1-dichloroethane, 1,1-dichloroethene, total 1,2-dichloroethene, tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene.

3.0 SOIL SAMPLING AND ANALYSIS

Sampling and analysis of the subsoils was stipulated in the Closure Plan as a means to evaluate the full closure of the soil piles. This section describes the actual sampling and analysis procedures. Section 4.0 contains the interpretation and evaluation of the analytical results.

3.1 Boring Layout

As depicted conceptually in Figure 3 of the Closure Plan, a total of eleven soil borings were to be drilled after removal of the soil piles. Two of the borings (GP96-BK1 and GP96-BK2) were to be drilled as background borings to establish the level of pre-existing VOC impacts in vicinity of Pile 1 and Pile 2, respectively. The areas beneath the piles were to be divided into 4 and 5 sectors for Pile 1 and Pile 2, respectively. Using a random number selection technique, a boring location was to be selected within each of the nine sectors (see Section 12 of the Closure Plan).

Prior to removal of the soil piles, SECOR accurately surveyed the margins of both piles and key landmarks to produce the detailed map of the piles (Figure 2). A Total Station survey instrument was used to measure the distance and bearing from the two survey markers (TP-1 and TP-2). The pile margin data were plotted in a computer aided drafting program to produce the pile margins shown in Figure 2. As stated in Closure Plan Modification Number 2 (Appendix A), an additional foot beyond the pile margins was assumed to be the limit of horizontal impacts. A two foot by two foot grid was superimposed on each pile outline and the nine boring locations shown in Figure 2 were selected using a QuickBASIC program written specifically for the random selection of boring locations. Appendix E contains a copy of the software code and the outputs for the selection of the boring locations. Note that because the grids exceed the limits of the pile outlined, additional boring locations beyond the required number were generated. The locations were picked sequentially and locations which

fell outside the pile margins (plus one foot) were discarded as outliers until the total number of required locations were selected.

After removal of the piles and prior to commencement of the boring program, SECOR returned to the site and located the eleven borings depicted on Figure 2 using a transit and chain. Bearing and distance for each boring location were determined relative to TP-1 and TP-2, and the location of each boring was clearly marked in the field.

3.2 Field Sampling

On October 15, 1996, a two person crew from Paramount Environmental Services Corporation mobilized to the site and drilled the eleven locations shown on Figure 2. Using a Geoprobe, continuous samples were collected at each location to a depth of five feet using a stainless steel sampler lined with new clear acetate plastic liners. A SECOR geologist was at the site to describe the soil samples and to package the samples for chemical analysis. The boring logs for the borings are found in Appendix F. After being described, the soil samples were placed in new 4 ounce glass jars with teflon lined lids and were placed in coolers for shipment to Quanterra Labs in Canton, Ohio. Seven soil samples were taken from each boring at the following depth intervals: surface to 6 inches; 6 to 12 inches; 12 to 18 inches; 18 to 24 inches; 24 to 36 inches; 36 to 48 inches; and 48 to 60 inches. In addition to the 77 soil samples, the following quality control samples were taken: two trip blanks (one for each cooler); one equipment rinse blank; four duplicate samples (1 duplicate for each group of 20 samples); and four matrix spike/matrix spike duplicate samples (1 MS/MSD for each group of 20 samples). The samples were shipped overnight express delivery and were received by Quanterra on October 16, 1996. All field procedures, including sampling equipment decontamination procedures, contained in the Closure Plan were followed. All borings were backfilled with bentonite upon completion.

Due a laboratory sample log in error, the four duplicate samples received by Quanterra on October 16, 1996 were not analyzed. After conferring with Susan Volk of the IDEM Chemistry Section, it was determined that re-sampling should occur. On December 6, 1996, the SECOR geologist worked with Paramount to collect additional samples. Samples were collected from the same locations and depth intervals as the four original duplicate samples were collected on October 16, 1996. The boring locations were laterally within a foot of the original locations. The following samples were collected from each of the four revisited locations: sample, sample duplicate, matrix spike/matrix spike duplicate. In addition, one trip blank and one equipment rinse blank were collected. This resampling had the effect of providing valid duplicate samples without compromising the quality control/quality assurance of the analysis. Identical field procedures were used in the resampling event and consistency with the October 16, 1996 event was maintained.

Referring to the boring logs in Appendix F, generalizations can be made about the observed soil types for the Pile 1 and Pile 2 borings. The Pile 1 borings encountered, after a 3 to 4 inch layer of concrete, about one foot of fill material underlain by silt loam, clay loam, or silty clay loam to the bottom of the boring at five feet. The fill material was loose, dry to moist, and dark in color to black with approximately 50% cinders and coal with the balance consisting of other granular materials. The underlying loam, materials were generally cohesive, moist, and brown to gray in color. Some odors were noted. A similar soil profile was found in the Pile 2 area with the exception that the black fill material was approximately three feet in thickness. The soils underlying the fill consisted of silt loam, silty clay loam, silty clay, or clay which was brown to gray in color, moist, and cohesive.

3.3 Sample Analysis

The soil and quality control samples were analyzed by Quanterra Labs of Canton, Ohio. SECOR and Quanterra followed the analytical procedures described in the Closure Plan. Premier Environmental Services ("Premier") was retained to perform validation of the

analytical data. Premier's final validation report is found in Appendix G. This validation report is a thorough review of Quanterra's procedures and provides a third party review of the analytical procedures relative to the analytical procedures stated in the closure plan.

The seventy seven (77) soil samples and quality control samples were tested using SW-846 Method 8240 which includes analyses for 33 volatile organic compounds including the seven COCs. A summary of the analytical results with data qualifiers provided by Premier is found in Appendix H.

Summary statistics are provided on the bottom of the spreadsheet in Appendix H. Six of the seven COCs were detected in one or more samples, the exception being 1,1-dichloroethene. In addition, the following non-COC VOCs were found to be present in one or more samples: benzene (1 sample); carbon disulfide (4 samples); carbon tetrachloride (12 samples); chloromethane (1 sample); toluene (1 sample); 1,1,2-trichloroethane (1 sample); vinyl chloride (1 sample); and xylenes (2 samples)[2].

---

[2] The common lab artifacts acetone, methylene chloride, and 2-butanone recognized by the U.S. EPA were detected by the laboratory. Acetone and methylene chloride were found in blanks, but 2-butanone was not. Thus the amounts reported by the lab are found in the spreadsheet in Appendix H. It was observed, however, that the concentration of 2-butanone was found to be in direct proportion to the amount of acetone in those samples where acetone was detected. In these cases the concentration of 2-butanone was approximately one fifth to one tenth the amount acetone reported. Therefore, 2-butanone is not included in the data evaluation described in Section 4.0 since it is probably associated with acetone as an artifact.

4.0 DATA EVALUATION

Chemical analysis of the subsoils beneath the soil piles is a required element of the closure process to determine if impact from potentially mobile chemicals in the piles has occurred, and if so, whether or not further action is required to meet the closure performance standard in 40 CFR 265.111 (i.e., to determine if "clean closure" has been achieved). This closure is complicated by the likely presence of pre-existing VOC impacts which are possibly chemically similar to the constituents in the soil piles. As described in the Closure Plan, the soil piles, particularly Pile 1, were located adjacent to the area where these same VOC-impacted soils were originally excavated (see inset in Figure 2). Pile 1 is particularly close to the south end of the excavation. In 1989 during excavation, ATEC observed VOC impacts to be present at the south end of the excavation. However, borings were not advanced in the areas of pile placement and therefore, the pre-existence of VOCs in the subsoils beneath the piles was not established at that time.

The goal of the sampling and analysis during this closure is twofold: 1) determination of the presence/absence of pre-existing VOC impacts or, conversely, the existence of soil pile VOC impacts and 2) evaluation of pile-impacted subsoils relative to the RME values (i.e., risk based clean-up levels) to determine if remediation is required or rather if clean closure has been achieved. It is important to note that the basis for achieving clean closure of the soil piles is the determination of whether or not the site-specific, risk-based values are exceeded only for those locations which are demonstrably shown to be impacted by the release of the seven COCs into the subsoils by the soil piles. Where pre-existing contamination is shown to exist, regardless of the individual constituents or concentrations, clean closure of the piles has been achieved. Again, the pre-existing VOC impacts will be addressed in the modified SACP to be submitted under separate cover.

As stated in the approved closure plan, the basis for determining whether or not pre-existing VOC impacts are present in the subsoils consists of three evaluation criteria. Quoting Section

3.0 of the approved Closure Plan, clean closure will "automatically" achieved under the following circumstances.

1) *At locations where contaminants are not present in any of the soil samples collected in the boring program described in Section 12 of the Closure Plan.*

2) *If contaminants present in the subsoils do not match the types of contaminants identified in the piles.*

3) *Where contaminants matching those in the piles are present, but increase or remain relatively constant to the full depth of the boring.*

If the converse of all these criteria exist, the finding is that soil impacts exist from the soil piles. In such cases, the data is then evaluated relative to the RME values found in Section 11 of the approved Closure Plan as required in Modification Number 3 of the Closure Plan approved letter (Appendix A).

To provide clarity and to assist in the evaluation of the analytical results found in Appendix H, the analytical results for the individual borings/sectors have been summarized in map view on Figure 2. In addition, for visualization purposes, $\log_{10}$ of concentration versus depth plots have been made for each of the eleven borings which are presented as Figures 3a-3e and 4a-4f. Figure 5 is a plot of the RME values at the same scale as Figures 3 and 4 for visual comparison of the RME values to the actual results. The total VOC concentrations (COCs plus non-COCs) are also provided for each sample on the boring logs in Appendix F.

Table 3 is a decision matrix developed for this closure to determine if clean closure has been achieved at each of the nine boring locations/sectors. In this matrix comparison of the data is made to the evaluation criteria above. The visual aids mentioned above should be reviewed in detail to verify the observations made. These results indicate that all sectors except Pile 2, Sectors 3 and 5 have evidence of pre-existing VOC-impacts. To add to the weight of evidence, three additional considerations providing indications of the pre-existence of VOC impacts or, conversely, the absence of soil pile impacts are also included in Table 3. These

are logical observations of conditions which provide evidence for or against soil pile impacts versus pre-existing.

1) *Concentration of one or more COCs exceeds the maximum concentrations observed in the soil piles.* If the concentration of one or more of the seven COCs exceeds the maximum concentration ever observed in any of the samples collected from the soil piles or excavation, then it is logical that the contamination is pre-existing. The soil pile and excavation data can be found in Appendix E of the Closure Plan. For this to occur, an unlikely process which promotes the accumulation and concentration of VOCs would have to exist.

2) *Associated background boring indicates pre-existing impacts present at background location.* The two background borings were located at a distance far enough from the piles to indicate the presence of pre-existing VOC impacts. Analytical results from individual sectors found to be comparable to the associated background boring in either the types or concentrations of VOCs would indicate whether pre-existing impacts are present or not. This applies equally whether there are elevated concentrations of VOCs or not.

3) *Soil Pile 1 was placed on pavement surface which could impede the migration of mobile constituents.* It was observed that the piles were placed on plastic sheets and covered with tarps, both of which would mitigate against migration of VOCs in aqueous solution and vapor phase. However, it was not discovered until after removal of the piles that a pavement surface exists below Pile 1. This concrete surface probably prevented or at worst significantly slowed the migration of VOCs.

Table 3. Closure Decision Matrix

			Pile No.	1				2				
			Sector No.	1	2	3	4	1	2	3	4	5
Evaluation Criteria from Section 3 of the Closure Plan. Clean Closure is achieved without further evaluation:	#1	at locations where contaminants are not present in any of the soil samples collected in the boring program described in Section 12 of the Closure Plan;		N	N	N	N	N	N	N	N	N
	#2	if contaminants present in the subsoils do not match the types of contaminants identified in the piles; or		Y[1]	Y[2]	N	Y[3]	Y[4]	Y[5]	N	Y[6]	N
	#3	where contaminants matching those in the piles are present, but increase or remain relatively constant to the full depth of the boring.		Y	N	Y	Y	N	N	N	N	N
Based on above criteria, impact by soil piles is not indicated, i.e., pre-existing contamination is indicated?				Y	Y	Y	Y	Y	Y	N	Y	N
Additional Considerations		Concentration of one or more COCs exceeds the maximum concentrations observed in the soil piles[7].		N	Y	N	Y	N	N	N	N	N
		Associated background boring indicates pre-existing VOC impacts are present at background location.		Y				N				
		Soil pile was placed on pavement surface which could impede the migration of mobile constituents.		Y				N				
One or more additional considerations indicate pre-existing VOC impacts are likely to be present?				Y	Y	Y	Y	N	N	N	N	N
Soil pile impacts are evident from observations?				N	N	N	N	Y	Y	Y	Y	Y
For sectors where soil pile impacts are indicated, do any of the COCs exceed the RME values?								N	N	N	N	N
Based on evaluation criteria #1-#3, additional considerations, and/or comparison to RME values, is soil pile clean closure indicated at each sector?				Y	Y	Y	Y	Y	Y	Y	Y	Y

1 - carbon tetrachloride (54 µg/kg @ 6"-12") and carbon disulfide (3.8 µg/kg @ 18"-24")
2 - vinyl chloride (22 µg/kg @ 12"-18")
3 - carbon tetrachloride (910 µg/kg @ 12"-18" and 5700 µg/kg @ 18"-24")
4 - carbon tetrachloride (5.1 µg/kg @ 18"-24" and 3.6 µg/kg @ 24"-36"), carbon disulfide (5 µg/kg @ 18"-24") and xylenes (4.2 µg/kg @ 18"-24")
5 - carbon disulfide (4.5 µg/kg @ 12"-18") and xylenes (2.7 µg/kg @ 18"-24")
6 - carbon disulfide (3.1 µg/kg @ 18"-24") and toluene (3 µg/kg @ 18"-24")
7 - these values can be found in Attachment E of the Closure Plan

The weight of evidence suggests that pre-existing VOC impacts are is present beneath Pile 1 which is relatively close to the south end of the excavation. Here elevated concentrations of both COCs and non-COCs at levels, in some cases, above the maximum levels observed in the soil pile or excavation samples were observed. There was not a clear decreasing-with-depth to non-detect trend as would be expected of the impacts were derived from the pile. In addition, elevated levels of VOCs were found in the associated background boring for Pile 1 (GP96-BK1) and a 3 to 4 inch thick concrete slab is present at this location. Therefore clean closure of Pile 1 was achieved due to the strong evidence of pre-existing VOC impacts.

For Pile 2, the presence of non-COCs in three of the five borings indicated that pre-existing contamination was potentially present in the Pile 2 area (see, for example, Figure 4a). However, the background boring (GP96-BK2) was essentially free of contamination. The COCs in these borings were much lower in concentration than those for Pile 1 and decreased with depth to non-detect in all cases. Also, the piles were placed on about three feet of organic-rich black fill material, rather that pavement. Therefore it appears that soil pile impacts are present to a limited degree, all of which was trapped by the black fill material. However, note that the RME values are never exceeded and therefore Pile 2 has met the cleanup levels in the approved Closure Plan and has thus met the Closure Performance Standards.

It is concluded, therefore, that the site has met the closure performance standards and no further action with respect to the soil piles is required. Certification of clean closure is appropriate for the two soil piles.

5.0 CLOSURE COSTS

The costs for completing the closure of the soil piles since the approval of the closure plan are summarized below in Table 4.

Table 4. Closure Costs[3]

Item	Cost
Soil Loading	$8,496
Soil Disposal	$13,035
Chemical Analysis[4]	$20,546
Consultant's Fees[5]	$36,000
Total	$78,077

3 Does not include legal fees.

4 Includes both testing for Special Waste application and sampling and analysis of subsoils.

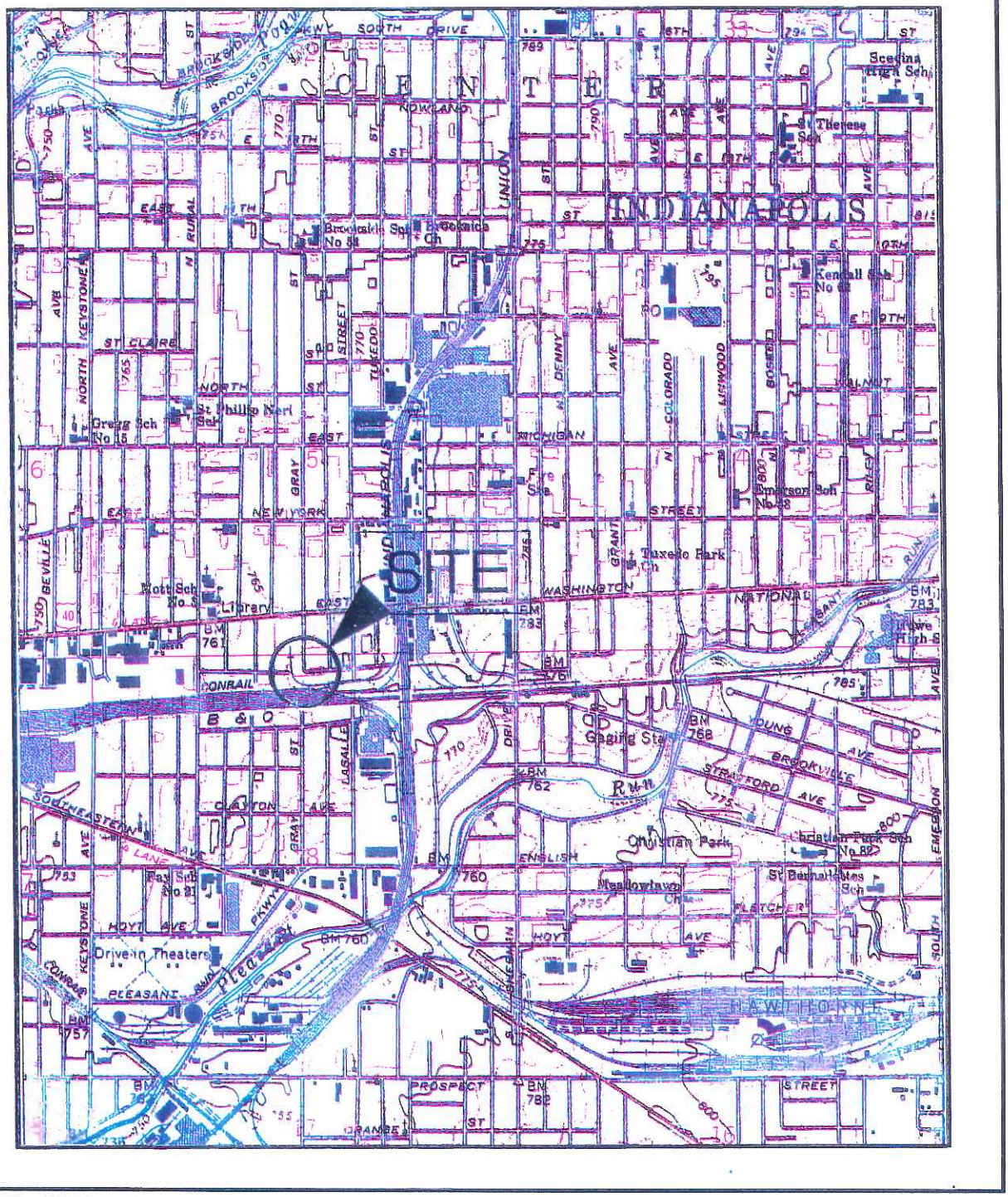
5 Includes soil sampling, data analysis and interpretation, Special Waste application, report preparation and project administration costs. Does not include costs incurred prior to approval of Closure Plan.

6.0 STATUS OF FACILITY AFTER CLOSURE

With the closure of the soil piles, CMW will continue to operate as a small quantity generator of less than 1,000 kg/month of hazardous waste which will be accumulated for less than ninety (90) days. No hazardous waste treatment, storage, or disposal will occur at the facility.

As a separate issue, CMW will submit within sixty days of submitting this report a modified Sampling, Analysis, and Cleanup Plan (SACP) to address any pre-existing VOC impacts. Because the status of the pre-existing impacts is not clearly related to either the operation of a treatment, storage, or disposal facility or CMW's activities as the generator of hazardous waste, CMW would prefer to address any pre-existing VOC impacts through the IDEM Voluntary Remediation Program (VRP). It is CMW's belief that any pre-existing VOC impacts were caused prior to the enactment of the Resource Conservation and Recovery Act (RCRA) in November 1980 by prior owners of the facility and, therefore, that the matter is more properly the subject of voluntary remediation. The modified SACP consequently will be developed in adherence to the VRP's Phase II procedures (and may also be developed in compliance with the National Contingency Plan [NCP] to allow CMW to proceed with cost recovery from other responsible parties). CMW is thus formally requesting that it be relieved of further direct obligation to the RCRA Program and be allowed to enter into the VRP to address the pre-existing contamination caused by others.

FIGURES



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, INDIANAPOLIS EAST, INDIANA QUADRANGLE

0 1000 2000 3000 4000 5000

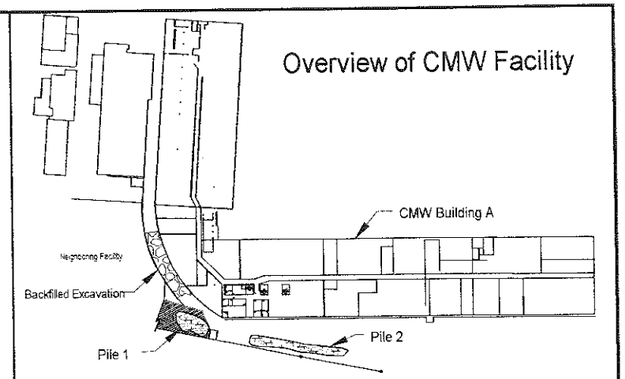
SCALE IN FEET

N

SECOR INTERNATIONAL INCORPORATED	PREPARED FOR CMW, INC.	SITE LOCATION MAP CMW, INC. INDIANAPOLIS, INDIANA	CADD FILE NO. – / CADD DATE 2/12/97 SCALE 1" = 2000' PROJECT NO. R0054-001-01 FIGURE NO. 1 / REV. 0 / PG.NO. –

CMW Building A

Overview of CMW Facility



GP96-P1-1

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	28	93	44	4.2 J	<6.3	<6.2	<5.6
1,1-Dichloroethane	11 J	40	31	3.1 J	<6.3	3.4 J	<5.6
1,1-Dichloroethene	<19	<24	<21	<7.1	<6.3	<6.2	<5.6
1,2-Dichloroethene (total)	42	18	13	12	4.5 J	<6.1	9.3
Tetrachloroethene	8.6 J	17 J	12 J	<7.1	<6.3	<6.2	<5.6
1,1,1-Trichloroethane	58	370	220	14	<6.3	5.5 J	<5.6
Trichloroethene	160	338	190	23	<6.3	6.2	<5.6
----other VOCs----							
Benzene	<19	<24	<21	<7.1	<6.3	<6.2	<5.6
Carbon disulfide	<19	<24	<21	3.8 J	<6.3	<6.2	<5.6
Carbon tetrachloride	<19	52	<21	<7.1	<6.3	<6.2	<5.6
Chloromethane	<39	<49	<42	<14	<13	<12	<11
Toluene	<19	<24	<21	<7.1	<6.3	<6.2	<5.6
1,1,2-Trichloroethane	<19	<24	<21	<7.1	<6.3	<6.2	<5.6
Vinyl chloride	<39	<49	<42	<14	<13	<12	<11
Xylenes (total)	<19	<24	<21	<7.1	<6.3	<6.2	<5.6

GP96-BK1

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	69000	220000	410	110	120	2000	79
1,1-Dichloroethane	<3700	<5400	<16	<6.1	<14	<940	<5.6
1,1-Dichloroethene	<3700	<5400	<16	<6.1	<14	<940	<5.6
1,2-Dichloroethene (total)	<3700	<5400	<16	<6.1	<14	<940	<5.6
Tetrachloroethene	3600 J	16000	6.6 J	3.7 J	<14	440 J	2.6 J
1,1,1-Trichloroethane	<3700	<5400	<16	<6.1	<14	<940	<5.6
Trichloroethene	100000	80000	50	67	97	2400	60
----other VOCs----							
Benzene	<3700	<5400	<16	<6.1	<14	<949	<5.6
Carbon disulfide	<3700	<5400	<16	<6.1	<14	<940	<5.6
Carbon tetrachloride	27000	77000	68	81	150	13000	130
Chloromethane	<7500	6200 J	<31	<12	<28	<1900	<11
Toluene	<3700	<5400	<16	<6.1	<14	<940	<5.6
1,1,2-Trichloroethane	<3700	<5400	<16	<6.1	<14	<940	<5.6
Vinyl chloride	<7500	<11000	<31	<12	<28	<1900	<11
Xylenes (total)	<3700	<5400	<16	<6.1	<14	<940	<5.6

GP96-P1-2

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6
1,1-Dichloroethane	<9300	<8000	22	<6.4	<6.0	<5.9	<5.6
1,1-Dichloroethene	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6
1,2-Dichloroethene (total)	15000	22000	91	<6.4	<6.0	<5.9	<5.6
Tetrachloroethene	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6
1,1,1-Trichloroethane	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6
Trichloroethene	220000	270000	70	5.3 J	3.1 J	<5.9	<5.6
----other VOCs----							
Benzene	<9300	<8000	4.3 J	<6.4	<6.0	<5.9	<5.6
Carbon disulfide	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6
Carbon tetrachloride	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6
Chloromethane	<19000	<16000	<12	<13	<12	<12	<11
Toluene	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6
1,1,2-Trichloroethene	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6
Vinyl chloride	<19000	<16000	22	<13	<12	<12	<11
Xylenes (total)	<9300	<8000	<6.2	<6.4	<6.0	<5.9	<5.6

GP96-P2-1

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,1-Dichloroethane	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,1-Dichloroethene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,2-Dichloroethene (total)	<5.2	<6.3	<6.6 UJ	8.4 J	<8.0 UJ	<6.2	<6.5
Tetrachloroethene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,1,1-Trichloroethane	<5.2	3.9 J	19 J	77 J	42 J	<6.2	<6.5
Trichloroethene	3.8 J	5.3 J	17 J	46 J	20 J	<6.2	<6.5
----other VOCs----							
Benzene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
Carbon disulfide	<5.2	<6.3	<6.6 UJ	5.0 J	<8.0 UJ	<6.2	<6.5
Carbon tetrachloride	<5.2	<6.3	<6.6 UJ	5.1 J	3.6 J	<6.2	<6.5
Chloromethane	<10	<13	<13 UJ	<13 UJ	<16 UJ	<12	<13
Toluene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,1,2-Trichloroethene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
Vinyl chloride	<10	<13	<13 UJ	<13 UJ	<16 UJ	<12	<13
Xylenes (total)	<5.2	<6.3	<6.6 UJ	4.2 J	<8.0	<6.2	<6.5

GP96-P1-3

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	120	9.8	<6.2	<6.1	<6.2 UJ	<6.1	11
1,1-Dichloroethane	65	16	8.9	4.9 J	<6.2	<6.1	4.2 J
1,1-Dichloroethene	<30	<5.8	<6.2	<6.1	<6.2 UJ	<6.1	<5.9
1,2-Dichloroethene (total)	42	18	13	12	4.5 J	<6.1	9.3
Tetrachloroethene	<30	<5.8	<6.2	<6.1	<6.2 UJ	<6.1	3.2 J
1,1,1-Trichloroethane	340	30	3.1 J	<6.1	<6.2 UJ	<6.1	5.6
Trichloroethene	550	16	<6.2	<6.1	16 J	6.9	58
----other VOCs----							
Benzene	<30	<5.8	<6.2	<6.1	<6.2 UJ	<6.1	<5.9
Carbon disulfide	<30	<5.8	<6.2	<6.1	<6.2 UJ	<6.1	<5.9
Carbon tetrachloride	<30	<5.8	<6.2	<6.1	<6.2 UJ	<6.1	<5.9
Chloromethane	<59	<12	<12	<12	<12 UJ	<12	<12
Toluene	<30	<5.8	<6.2	<6.1	<6.2 UJ	<6.1	<5.9
1,1,2-Trichloroethane	<30	<5.8	<6.2	<6.1	<6.2 UJ	<6.1	<5.9
Vinyl chloride	<59	<12	<12	<12	<12 UJ	<12	<12
Xylenes (total)	<30	<5.8	<6.2	<6.1	<6.2 UJ	<6.1	<5.9

GP96-BK2

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
1,1-Dichloroethane	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
1,1-Dichloroethene	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
1,2-Dichloroethene (total)	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
Tetrachloroethene	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
1,1,1-Trichloroethane	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
Trichloroethene	3.4 J	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
----other VOCs----							
Benzene	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
Carbon disulfide	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
Carbon tetrachloride	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
Chloromethane	<12	<12	<11 UJ	<12	<14 UJ	<11	<14
Toluene	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
1,1,2-Trichloroethane	<5.8	<6.2	<5.7 UJ	<5.8	<7.0 UJ	<5.7	<6.8
Vinyl chloride	<12	<12	<11 UJ	<12	<14 UJ	<11	<14
Xylenes (total)	<5.8 UJ	<6.2 UJ	<5.7 UJ	<5.8 UJ	<7.0 UJ	<5.7	<6.8

GP96-P2-2

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<20 UJ	<7.1 UJ	<8.0 UJ	<6.4 UJ	<8.3 UJ	<6.2	<6.3
1,1-Dichloroethane	<20 UJ	<7.1 UJ	<8.0 UJ	<6.4 UJ	<8.3 UJ	<6.2	<6.3
1,1-Dichloroethene	<20 UJ	<7.1 UJ	<8.0 UJ	<6.4 UJ	<8.3 UJ	<6.2	<6.3
1,2-Dichloroethene (total)	<20 UJ	<7.1 UJ	<8.0 UJ	13 J	<8.3 UJ	<6.2	<6.3
Tetrachloroethene	<20 UJ	<7.1 UJ	<8.0 UJ	<6.4 UJ	<8.3 UJ	<6.2	<6.3
1,1,1-Trichloroethane	30 J	32 J	31 J	7.9 J	12 J	<6.2	<6.3
Trichloroethene	250 J	190 J	64 J	15 J	5.7 J	<6.2	<6.3
----other VOCs----							
Benzene	<20 UJ	<7.1 UJ	<8.0 UJ	<6.4 UJ	<8.3 UJ	<6.2	<6.3
Carbon disulfide	<20 UJ	<7.1 UJ	4.5 J	<6.4 UJ	<8.3 UJ	<6.2	<6.3
Carbon tetrachloride	<20 UJ	<7.1 UJ	<8.0 UJ	<6.4 UJ	<8.3 UJ	<6.2	<6.3
Chloromethane	<40 UJ	<14 UJ	<16 UJ	<13 UJ	<17 UJ	<12	<13
Toluene	<20 UJ	<7.1 UJ	<8.0 UJ	<6.4 UJ	<8.3 UJ	<6.2	<6.3
1,1,2-Trichloroethene	<20 UJ	<7.1 UJ	<8.0 UJ	<6.4 UJ	<8.3 UJ	<6.2	<6.3
Vinyl chloride	<40 UJ	<14 UJ	<16 UJ	<13 UJ	<17 UJ	<12	<13
Xylenes (total)	<20 UJ	<7.1 UJ	<8.0 UJ	2.7 J	<8.3 UJ	<6.2	<6.3

GP96-P2-4

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3 UJ	<6.0
1,1-Dichloroethane	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3 UJ	<6.0
1,1-Dichloroethene	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
1,2-Dichloroethene (total)	<55	6.8 J	3.6 J	<6.5 UJ	5.5 J	<6.3	<6.0
Tetrachloroethene	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
1,1,1-Trichloroethane	33 J	17 J	<6.4 UJ	9.0 J	32 J	<6.3	<6.0
Trichloroethene	450	150 J	24 J	15 J	12 J	<6.3	<6.0
----other VOCs----							
Benzene	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
Carbon disulfide	<55	<15	<6.4 UJ	3.1 J	<6.4 UJ	<6.3	<6.0
Carbon tetrachloride	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
Chloromethane	<110	<30	<13 UJ	<13 UJ	<13 UJ	<13	<12
Toluene	<55	<15 UJ	<6.4 UJ	3.0 J	<6.4 UJ	<6.3	<6.0
1,1,2-Trichloroethane	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
Vinyl chloride	<110	<30	<13 UJ	<13 UJ	<13 UJ	<13	<12
Xylenes (total)	<55	<15 UJ	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0

GP96-P2-5

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,1-Dichloroethane	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,1-Dichloroethene	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,2-Dichloroethene (total)	<6.8 UJ	<5.7	<5.5	<6.3	<6.2	<6.1	<6.3
Tetrachloroethene	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,1,1-Trichloroethane	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Trichloroethene	5.4 J	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
----other VOCs----							
Benzene	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Carbon disulfide	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Carbon tetrachloride	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Chloromethane	<14 UJ	<11 UJ	<11 UJ	<13 UJ	<12	<12	<13
Toluene	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,1,2-Trichloroethane	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Vinyl chloride	<14 UJ	<11 UJ	<11 UJ	<13 UJ	<12	<12	<13
Xylenes (total)	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3

GP96-P2-3

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<9.3	<7.2	<6.1	<7.5 UJ	<6.6	<6.1	<5.7
1,1-Dichloroethane	8.2 J	3.6 UJ	<6.1	<7.5 UJ	<6.6	<6.1	<5.7
1,1-Dichloroethene	<9.3	<7.2 UJ	<6.1	<7.5 UJ	<6.6	<6.1	<5.7
1,2-Dichloroethene (total)	20 J	<7.2 UJ	<6.1	<7.5 UJ	3.9 J	<6.1	<5.7
Tetrachloroethene	<9.3 UJ	<7.2 UJ	<6.1	<7.5 UJ	<6.6	<6.1	<5.7
1,1,1-Trichloroethane	58 J	54 J	8.6	160 J	<6.6	<6.1	<5.7
Trichloroethene	350 J	42 J	5.7 J	9.0 J	<6.6	<6.1	<5.7
----other VOCs----							
Benzene	<9.3 UJ	<7.2 UJ	<6.1	<7.5 UJ	<6.6	<6.1	<5.7
Carbon disulfide	<9.3	<7.2 UJ	<6.1	<7.5 UJ	<6.6	<6.1	<5.7
Carbon tetrachloride	<9.3	<7.2 UJ	<6.1	<7.5 UJ	<6.6	<6.1	<5.7
Chloromethane	<19	<14 UJ	<12	<15 UJ	<13	<12	<11
Toluene	<9.3 UJ	<7.2 UJ	<6.1 UJ	<7.5 UJ	<6.6 UJ	<6.1	<5.7
1,1,2-Trichloroethane	14 J	<7.2 UJ	<6.1	<7.5 UJ	<6.6	<6.1	<5.7
Vinyl chloride	<19	<14 UJ	<12	<15 UJ	<13	<12	<11
Xylenes (total)	<9.3 UJ	<7.2 UJ	<6.1 UJ	<7.5 UJ	<6.6 UJ	<6.1	<5.7

GP96-P1-4

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	9.2 J	57 J	1400	5900 J	<6.5	<5.8	<5.6
1,1-Dichloroethane	<19	<67	<1400	<7000	<6.5	<5.8	<5.6
1,1-Dichloroethene	<19	<67	<1400	<7000	<6.5	<5.8	<5.6
1,2-Dichloroethene (total)	<19	35 J	<1400	<7000	<6.5	<5.8	<5.6
Tetrachloroethene	<19	<67	<1400	3200 J	<6.5	<5.8	<5.6
1,1,1-Trichloroethane	220	800	40000	160000	20	4.4 J	11
Trichloroethene	190	1600	54000	140000	21	5.4 J	7.1
----other VOCs----							
Benzene	<19	<67	<1400	<7000	<6.5	<5.8	<5.6
Carbon disulfide	<19	<67	<1400	<7000	<6.5	<5.8	<5.6
Carbon tetrachloride	<19	<67	910 J	5700 J	<6.5	<5.8	<5.6
Chloromethane	<38	<130	<2800	<14000	<13	<12	<11
Toluene	<19	<67	<1400	<7000	<6.5	<5.8	<5.6
1,1,2-Trichloroethene	<19	<67	<1400	<7000	<6.5	<5.8	<5.6
Vinyl chloride	<38	<130	<2800	<14000	<13	<12	<11
Xylenes (total)	<19	<67	<1400	<7000	<6.5	<5.8	<5.6

GP96-P2-1

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,1-Dichloroethane	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,1-Dichloroethene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,2-Dichloroethene (total)	<5.2	<6.3	<6.6 UJ	8.4 J	<8.0 UJ	<6.2	<6.5
Tetrachloroethene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,1,1-Trichloroethane	<5.2	3.9 J	19 J	77 J	42 J	<6.2	<6.5
Trichloroethene	3.8 J	5.3 J	17 J	46 J	20 J	<6.2	<6.5
----other VOCs----							
Benzene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
Carbon disulfide	<5.2	<6.3	<6.6 UJ	5.0 J	<8.0 UJ	<6.2	<6.5
Carbon tetrachloride	<5.2	<6.3	<6.6 UJ	5.1 J	3.6 J	<6.2	<6.5
Chloromethane	<10	<13	<13 UJ	<13 UJ	<16 UJ	<12	<13
Toluene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
1,1,2-Trichloroethene	<5.2	<6.3	<6.6 UJ	<6.7 UJ	<8.0 UJ	<6.2	<6.5
Vinyl chloride	<10	<13	<13 UJ	<13 UJ	<16 UJ	<12	<13
Xylenes (total)	<5.2	<6.3	<6.6 UJ	4.2 J	<8.0	<6.2	<6.5

GP96-P2-4

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3 UJ	<6.0
1,1-Dichloroethane	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3 UJ	<6.0
1,1-Dichloroethene	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
1,2-Dichloroethene (total)	<55	6.8 J	3.6 J	<6.5 UJ	5.5 J	<6.3	<6.0
Tetrachloroethene	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
1,1,1-Trichloroethane	33 J	17 J	<6.4 UJ	9.0 J	32 J	<6.3	<6.0
Trichloroethene	450	150 J	24 J	15 J	12 J	<6.3	<6.0
----other VOCs----							
Benzene	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
Carbon disulfide	<55	<15	<6.4 UJ	3.1 J	<6.4 UJ	<6.3	<6.0
Carbon tetrachloride	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
Chloromethane	<110	<30	<13 UJ	<13 UJ	<13 UJ	<13	<12
Toluene	<55	<15 UJ	<6.4 UJ	3.0 J	<6.4 UJ	<6.3	<6.0
1,1,2-Trichloroethane	<55	<15	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0
Vinyl chloride	<110	<30	<13 UJ	<13 UJ	<13 UJ	<13	<12
Xylenes (total)	<55	<15 UJ	<6.4 UJ	<6.5 UJ	<6.4 UJ	<6.3	<6.0

GP96-P2-5

Sample Depth	0'-6'	6'-12'	12'-18'	18'-24'	24'-36'	36'-48'	48'-60'
----seven constituents of concern----							
Chloroform	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,1-Dichloroethane	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,1-Dichloroethene	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,2-Dichloroethene (total)	<6.8 UJ	<5.7	<5.5	<6.3	<6.2	<6.1	<6.3
Tetrachloroethene	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,1,1-Trichloroethane	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Trichloroethene	5.4 J	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
----other VOCs----							
Benzene	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Carbon disulfide	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Carbon tetrachloride	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Chloromethane	<14 UJ	<11 UJ	<11 UJ	<13 UJ	<12	<12	<13
Toluene	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
1,1,2-Trichloroethane	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3
Vinyl chloride	<14 UJ	<11 UJ	<11 UJ	<13 UJ	<12	<12	<13
Xylenes (total)	<6.8 UJ	<5.7 UJ	<5.5 UJ	<6.3 UJ	<6.2	<6.1	<6.3

TP-2 (survey control point)

TP-1 (survey control point)

GP96-BK-1

GP96-BK-2

GP96-P1-1

GP96-P1-2

GP96-P1-3

GP96-P1-4

GP96-P2-1

GP96-P2-2

GP96-P2-3

GP96-P2-4

GP96-P2-5

SHED

CONRAIL RAILROAD YARDS

Grid for Selecting Boring Locations

Grid for Selecting Boring Locations

Boundary of Pile No. 1 with additional 1 foot perimeter

Boundary of Pile No. 2 with additional 1 foot perimeter

5 10 20

Scale in Feet

N

All Analytical Results in ug/kg

REV.	DATE	DESCRIPTION	BY	CKD.	APP.

DESIGNED BY	GBB
DRAWN BY	JRC
CHECKED BY	MAK
APPROVED BY	CJG
DATE	2/10/96

SECOR
INTERNATIONAL INCORPORATED

PREPARED FOR

CONTACTS METALS WELDING INCORPORATED

SOIL PILE CLOSURE PROJECT
SITE MAP

CMW, INC.
70 SOUTH GRAY STREET
INDIANAPOLIS, INDIANA 46206

PROJECT NO.	R0054-01-001
SCALE	1"=20'
FIGURE NO.	2
CADD FILE NO.	R540101A.SKD
CADD DATE	2-10-96

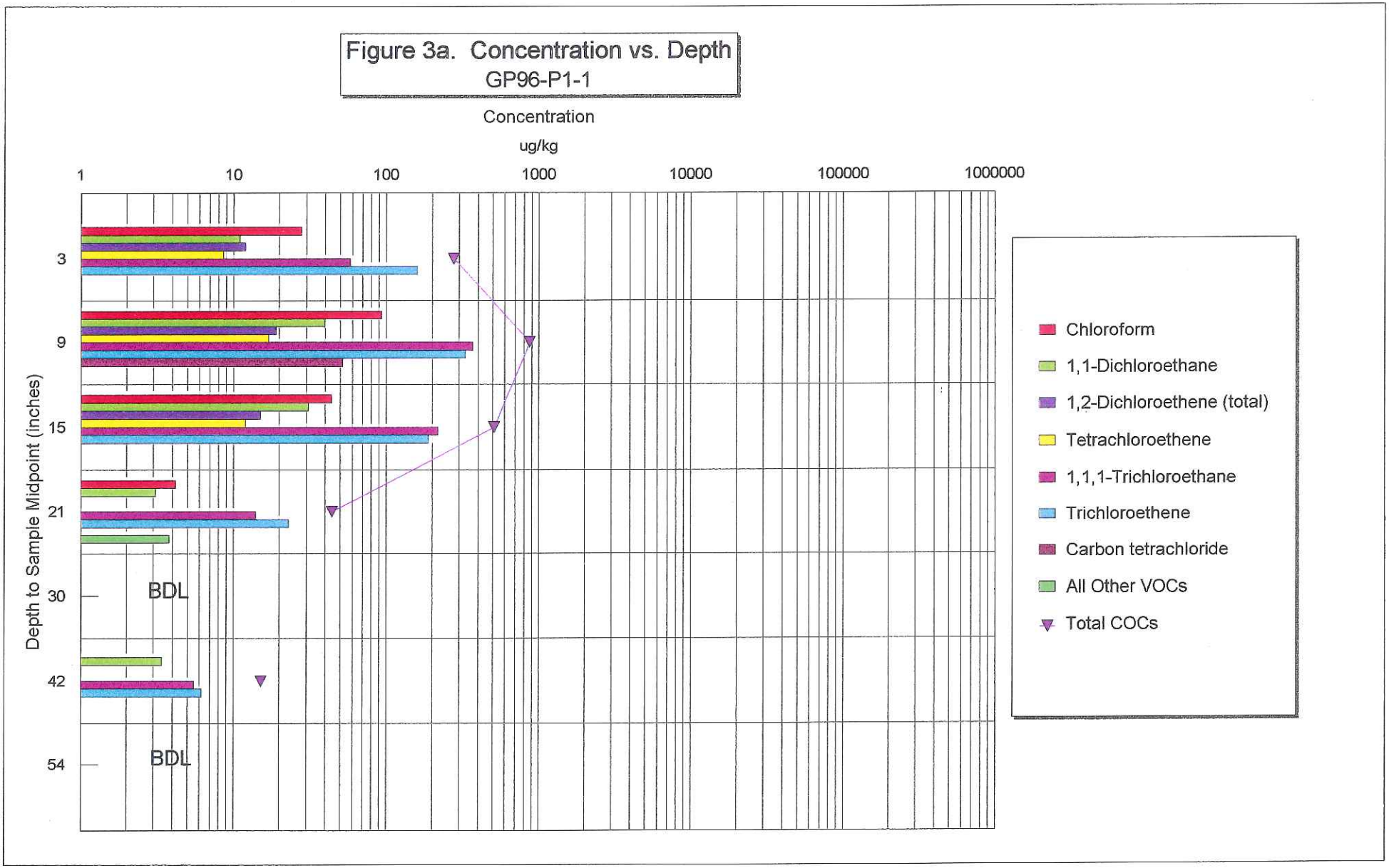


Figure 3a. Concentration vs. Depth
GP96-P1-1
Concentration
ug/kg
1
10
100
1000
10000
100000
1000000
Depth to Sample Midpoint (inches)
3
9
15
21
30
42
54
BDL
BDL
Chloroform
1,1-Dichloroethane
1,2-Dichloroethene (total)
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene
Carbon tetrachloride
All Other VOCs
Total COCs

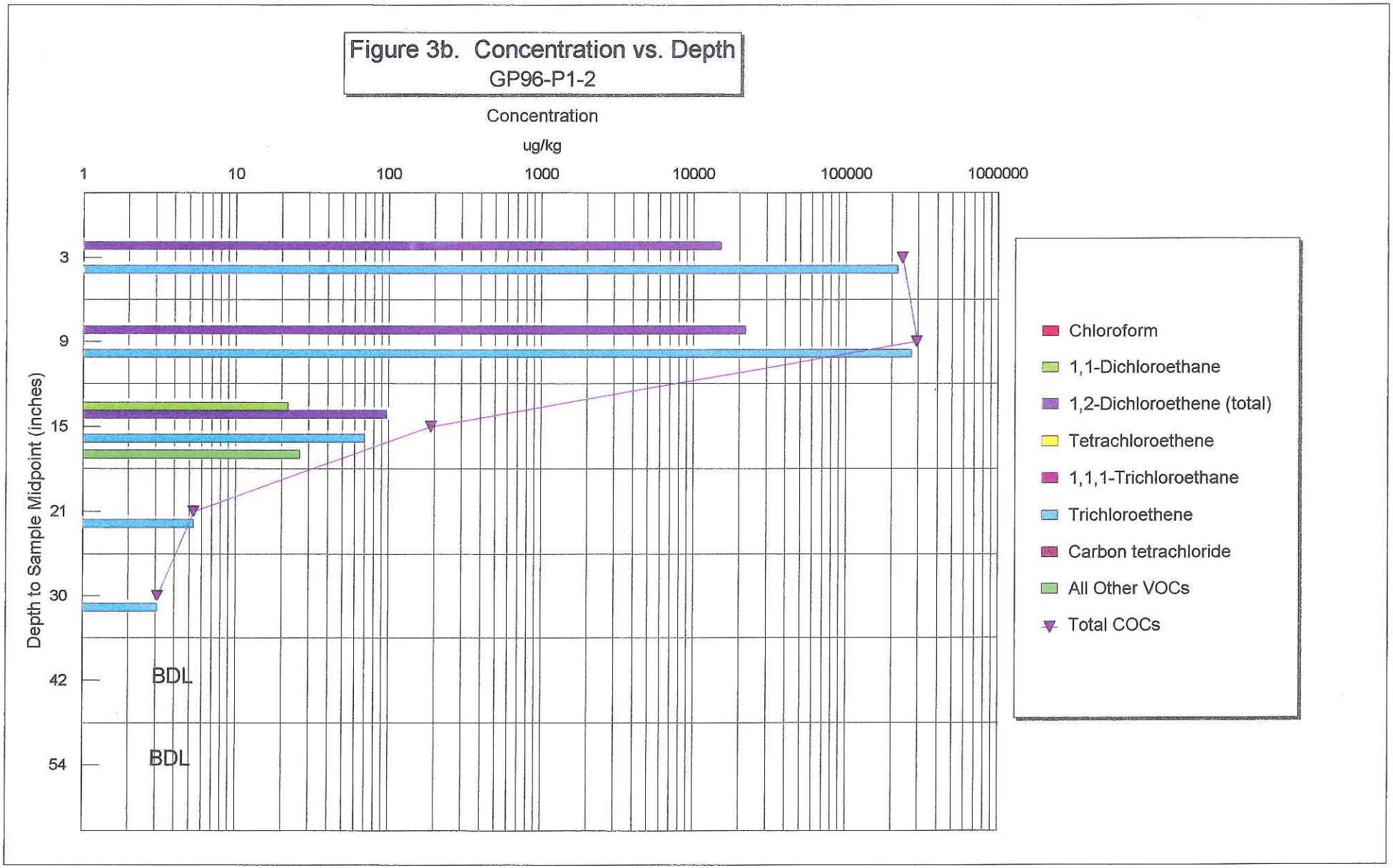


Figure 3b. Concentration vs. Depth
GP96-P1-2
Concentration
ug/kg
1
10
100
1000
10000
100000
1000000
Depth to Sample Midpoint (inches)
3
9
15
21
30
42
54
BDL
BDL
Chloroform
1,1-Dichloroethane
1,2-Dichloroethene (total)
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene
Carbon tetrachloride
All Other VOCs
Total COCs

Figure 3c. Concentration vs. Depth
GP96-P1-3

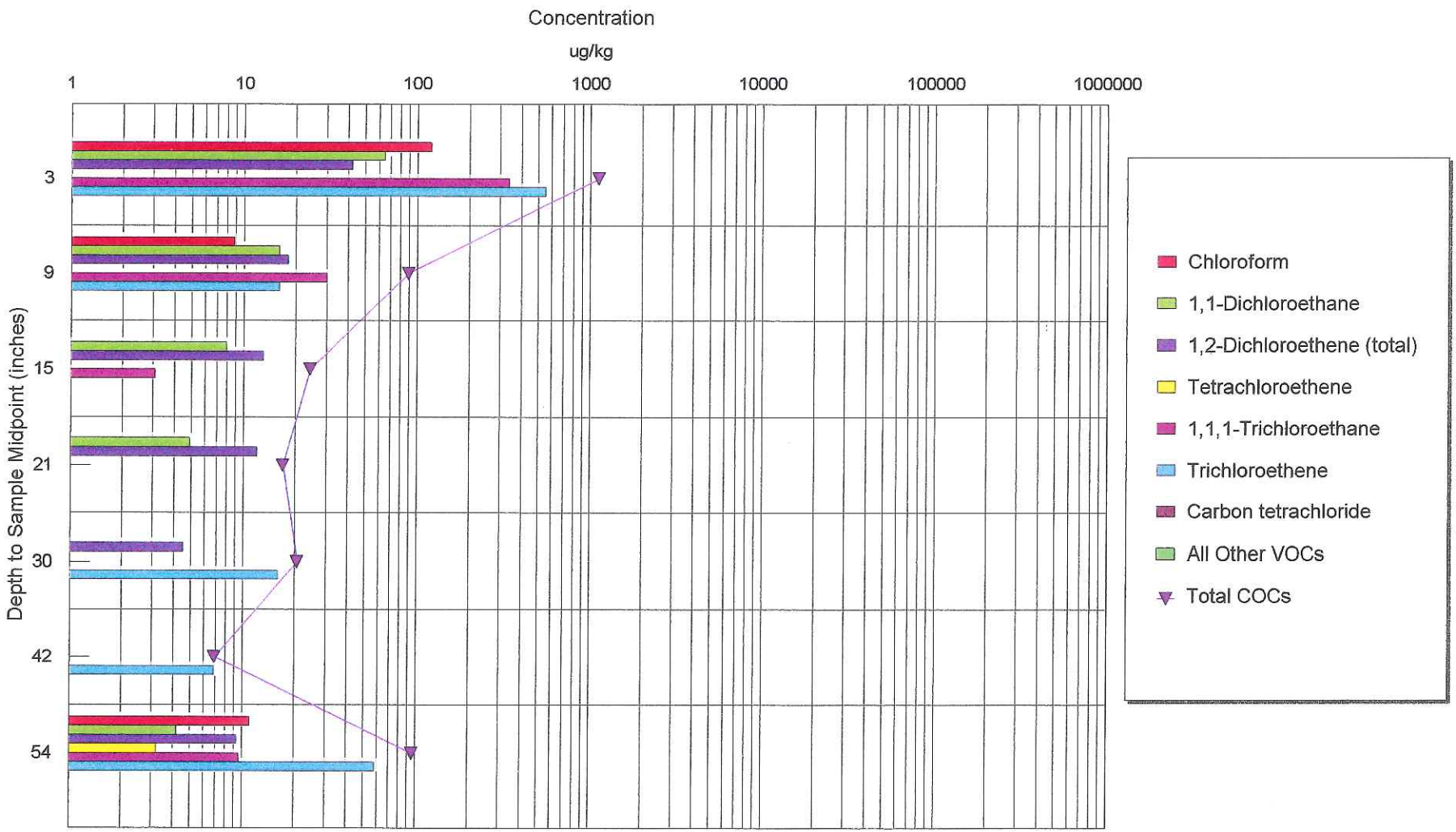


Figure 3d. Concentration vs. Depth
GP96-P1-4

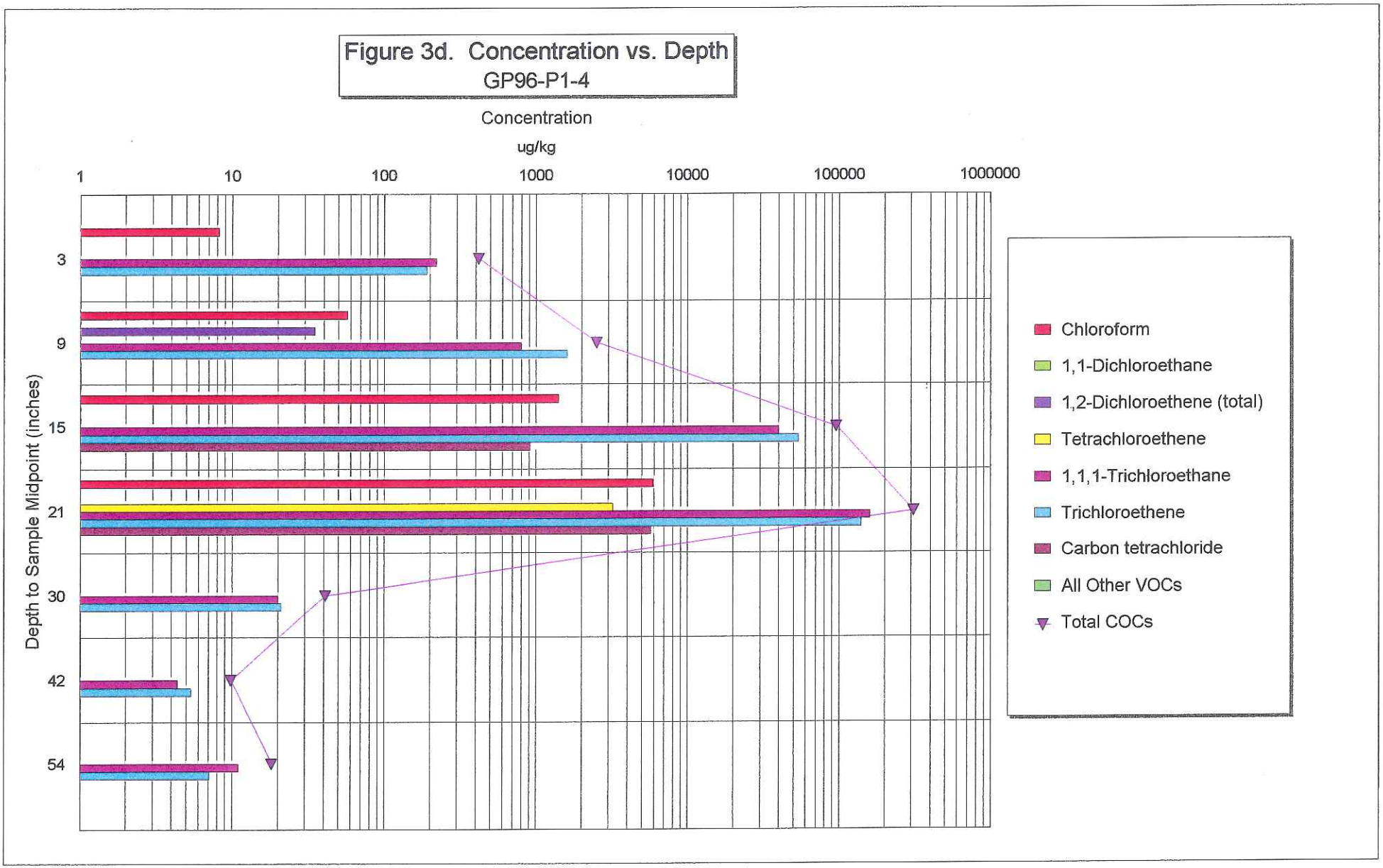
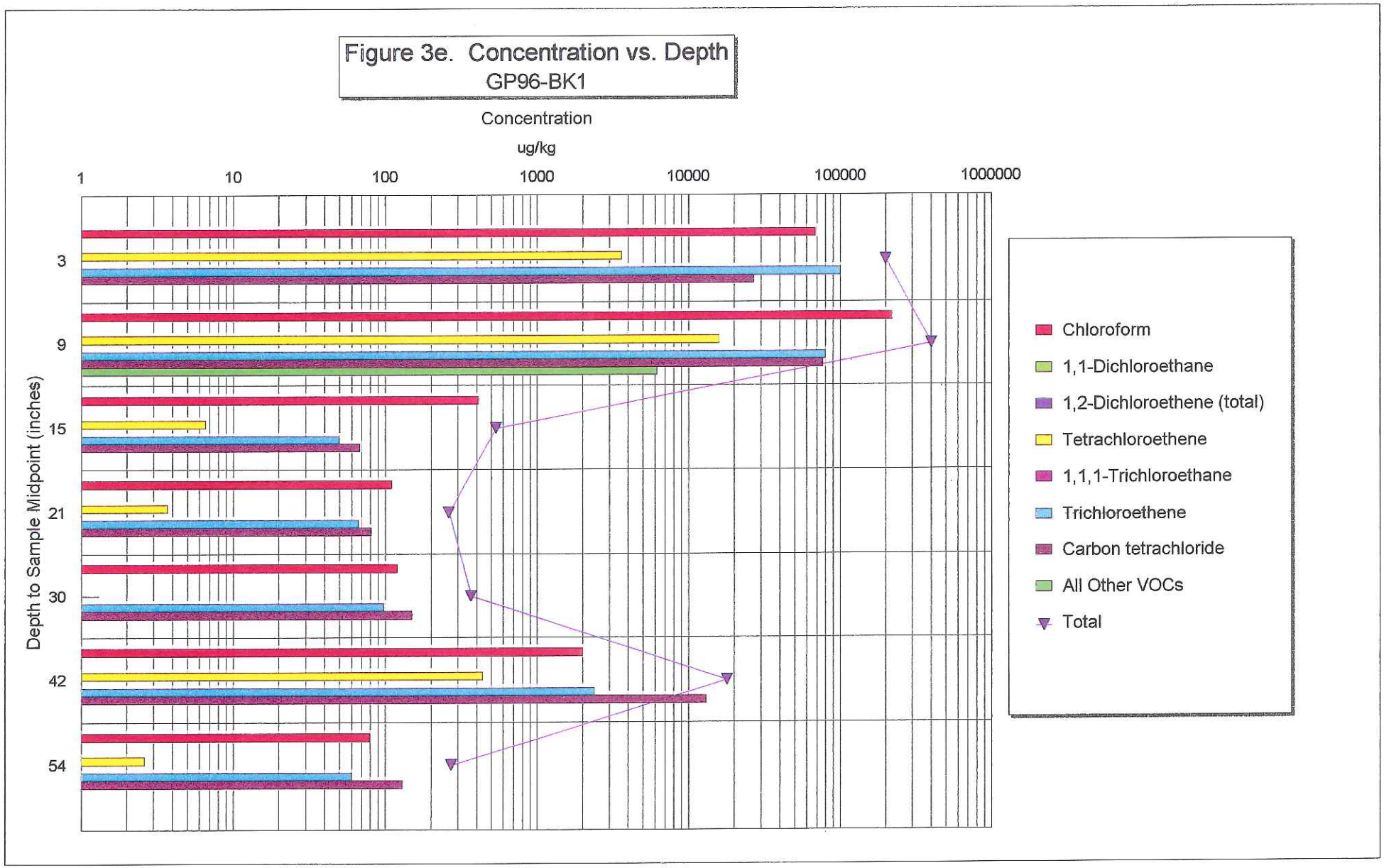


Figure 3e. Concentration vs. Depth
GP96-BK1



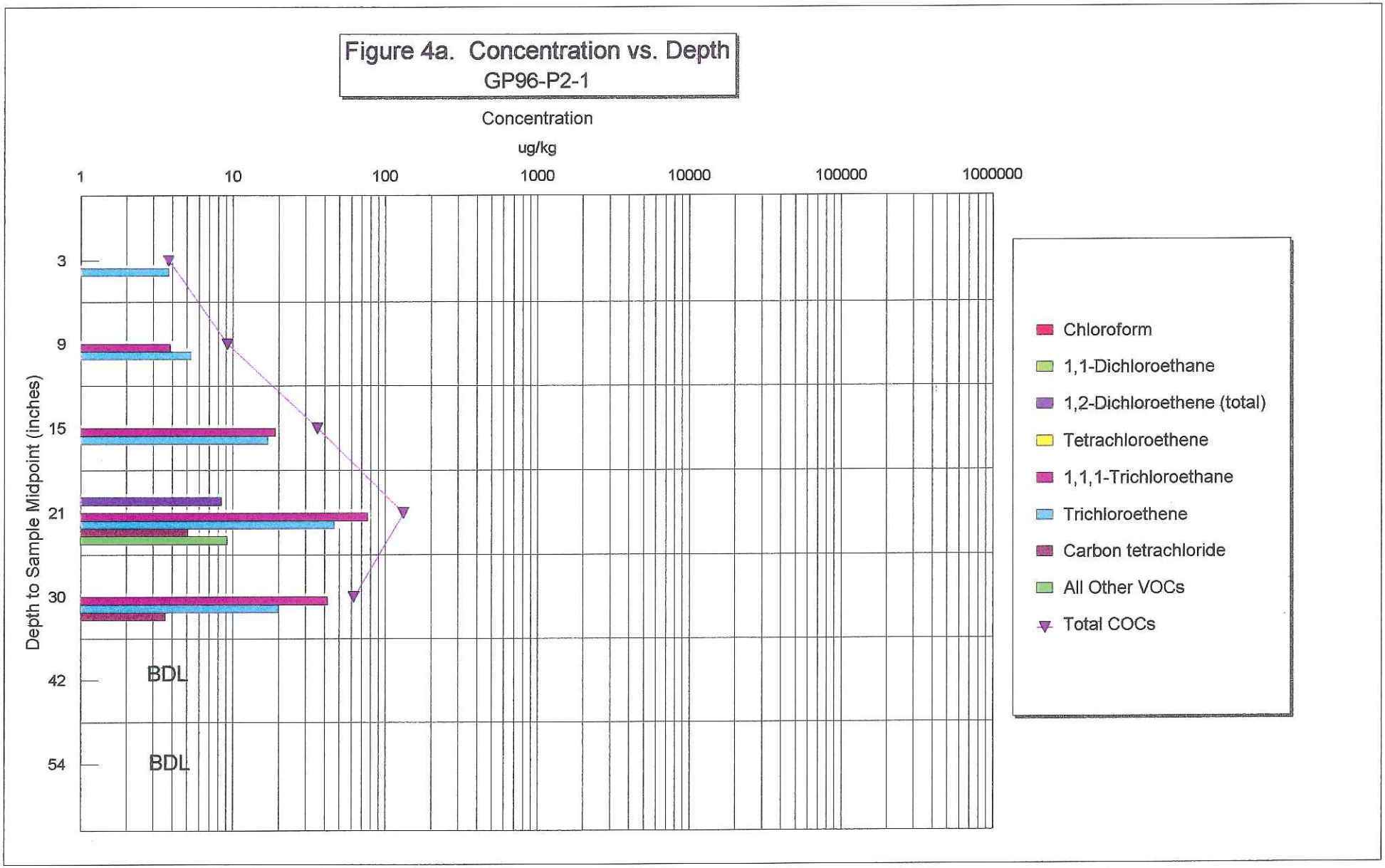
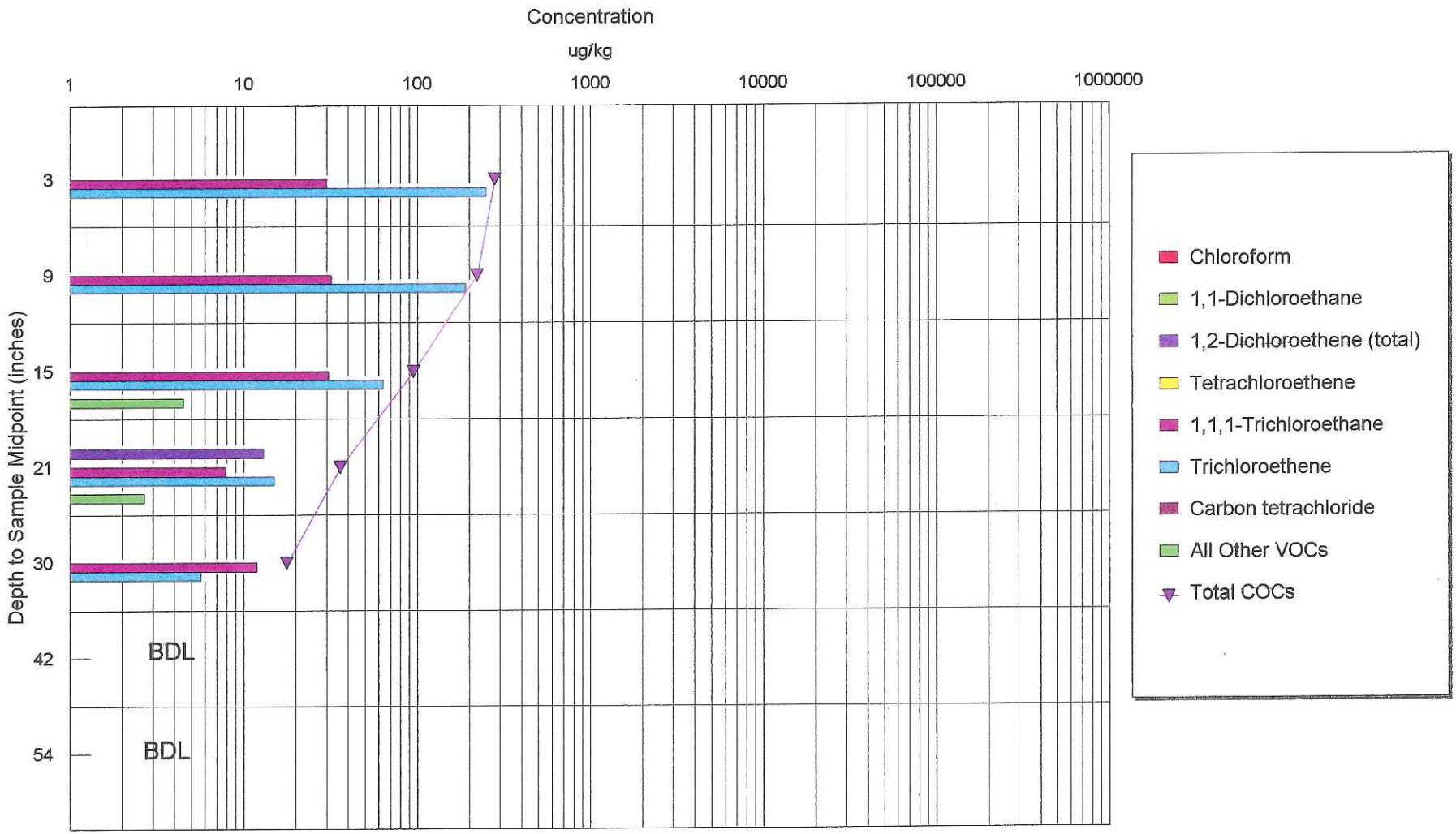


Figure 4a. Concentration vs. Depth
GP96-P2-1
Concentration
ug/kg
1
10
100
1000
10000
100000
1000000
Depth to Sample Midpoint (inches)
3
9
15
21
30
42
54
BDL
BDL
Chloroform
1,1-Dichloroethane
1,2-Dichloroethene (total)
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene
Carbon tetrachloride
All Other VOCs
Total COCs

Figure 4b. Concentration vs. Depth
GP96-P2-2



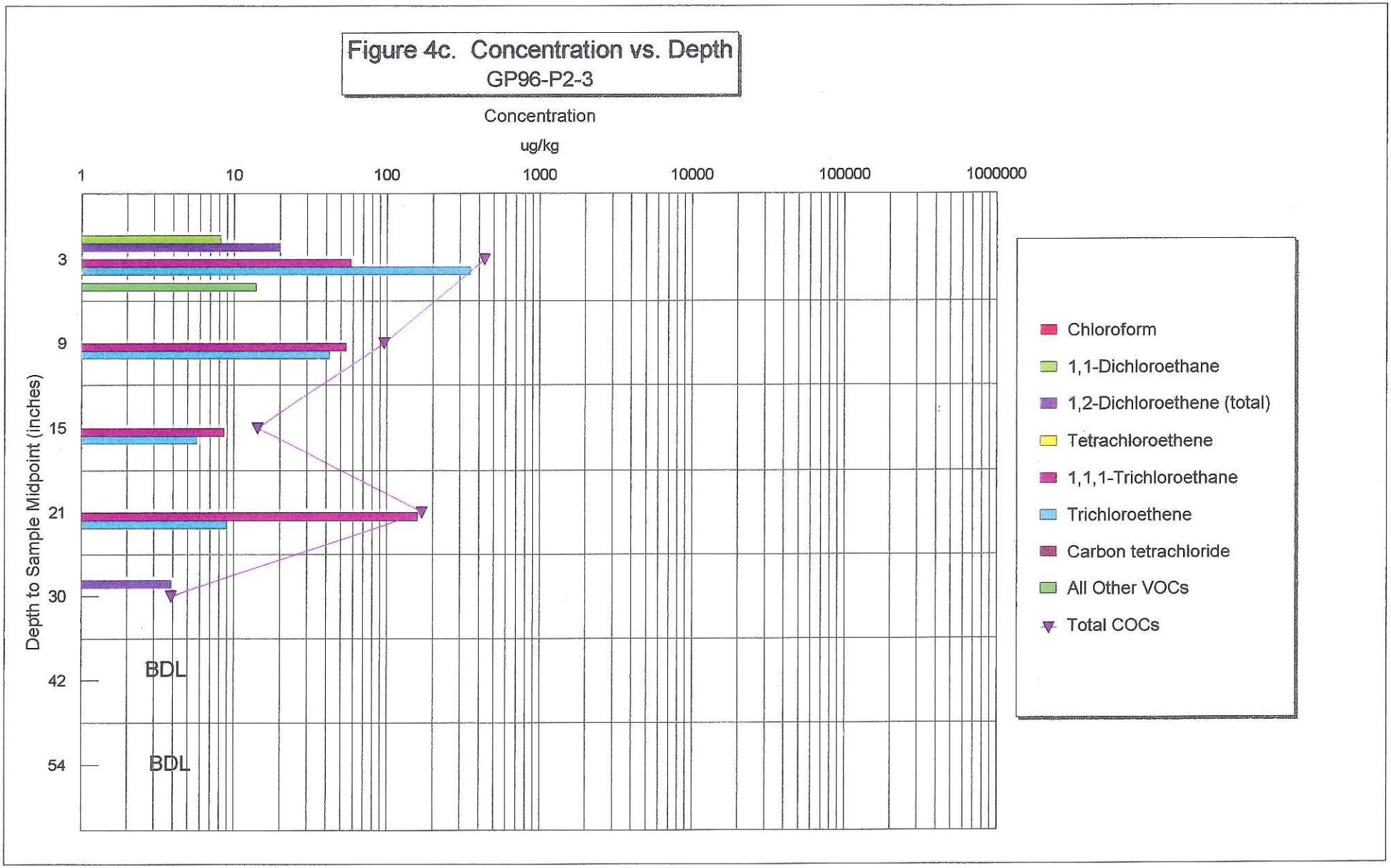


Figure 4c. Concentration vs. Depth
GP96-P2-3
Concentration
ug/kg
1
10
100
1000
10000
100000
1000000
Depth to Sample Midpoint (inches)
3
9
15
21
30
42
54
BDL
BDL
Chloroform
1,1-Dichloroethane
1,2-Dichloroethene (total)
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene
Carbon tetrachloride
All Other VOCs
Total COCs

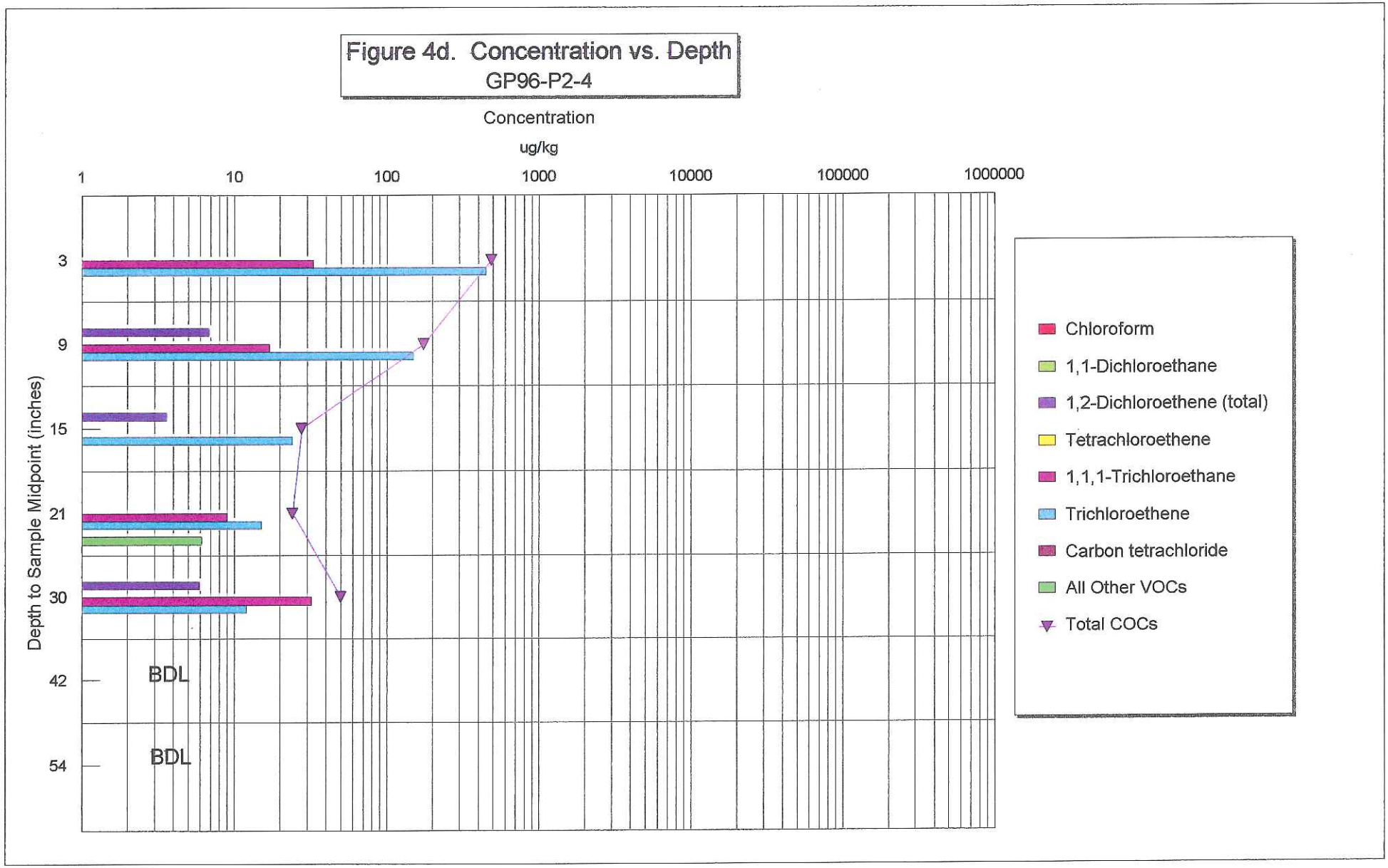


Figure 4d. Concentration vs. Depth
GP96-P2-4
Concentration
ug/kg
1
10
100
1000
10000
100000
1000000
Depth to Sample Midpoint (inches)
3
9
15
21
30
42
54
BDL
BDL
Chloroform
1,1-Dichloroethane
1,2-Dichloroethene (total)
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene
Carbon tetrachloride
All Other VOCs
Total COCs

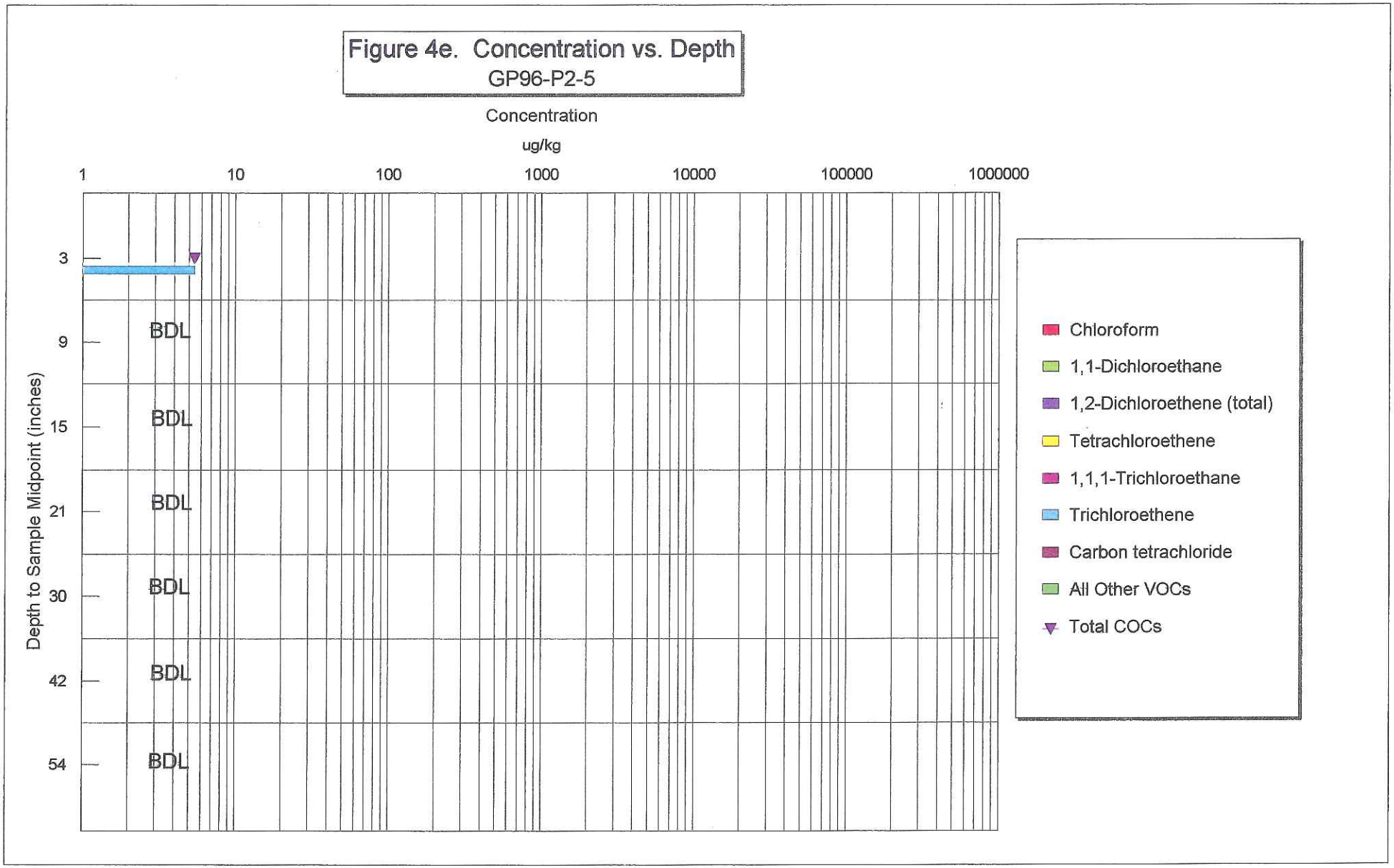


Figure 4e. Concentration vs. Depth
GP96-P2-5
Concentration
ug/kg
1
10
100
1000
10000
100000
1000000
Depth to Sample Midpoint (inches)
3
9
15
21
30
42
54
BDL
BDL
BDL
BDL
BDL
BDL
Chloroform
1,1-Dichloroethane
1,2-Dichloroethene (total)
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene
Carbon tetrachloride
All Other VOCs
Total COCs

Figure 4f. Concentration vs. Depth
GP96-BK2

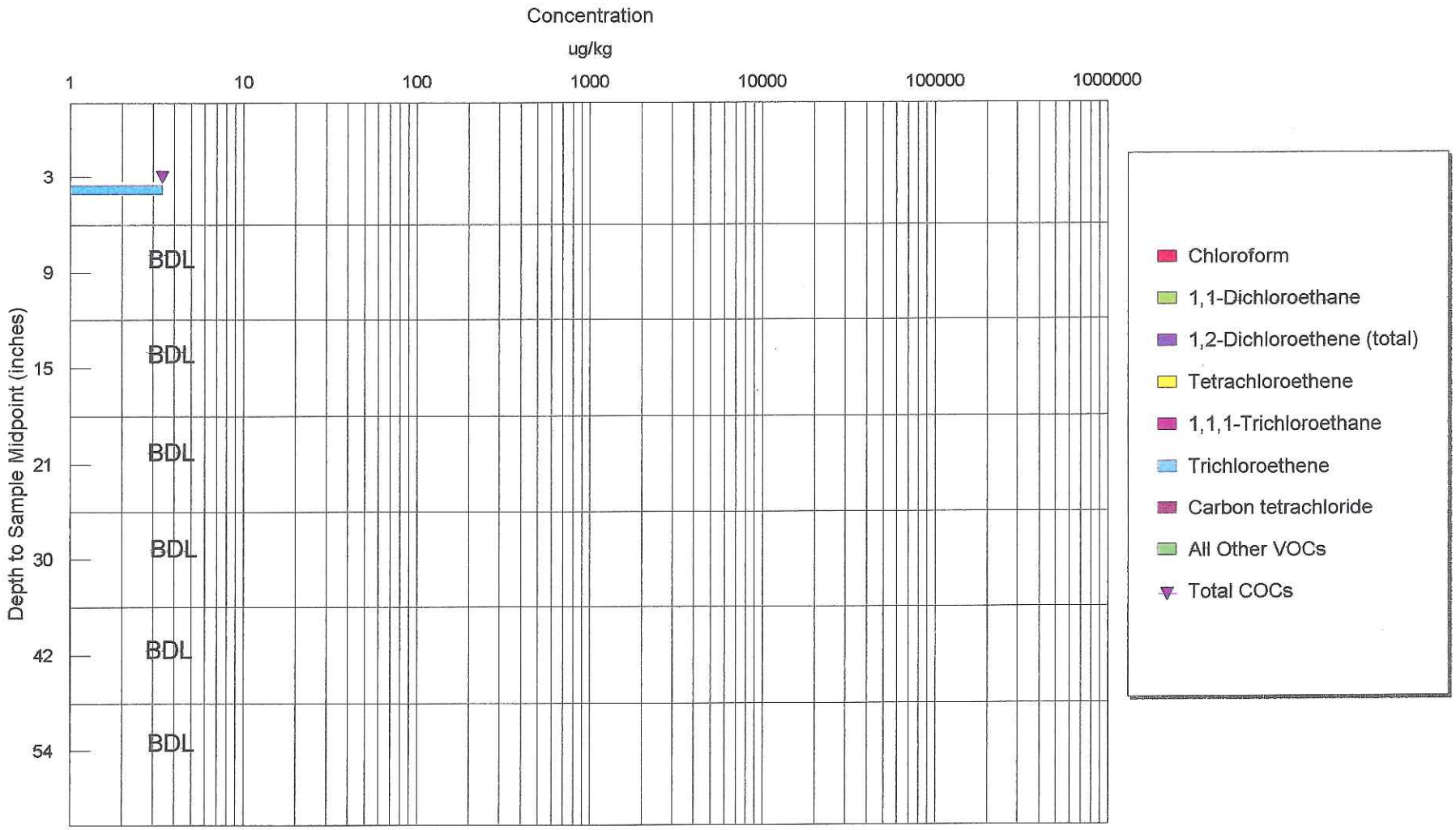
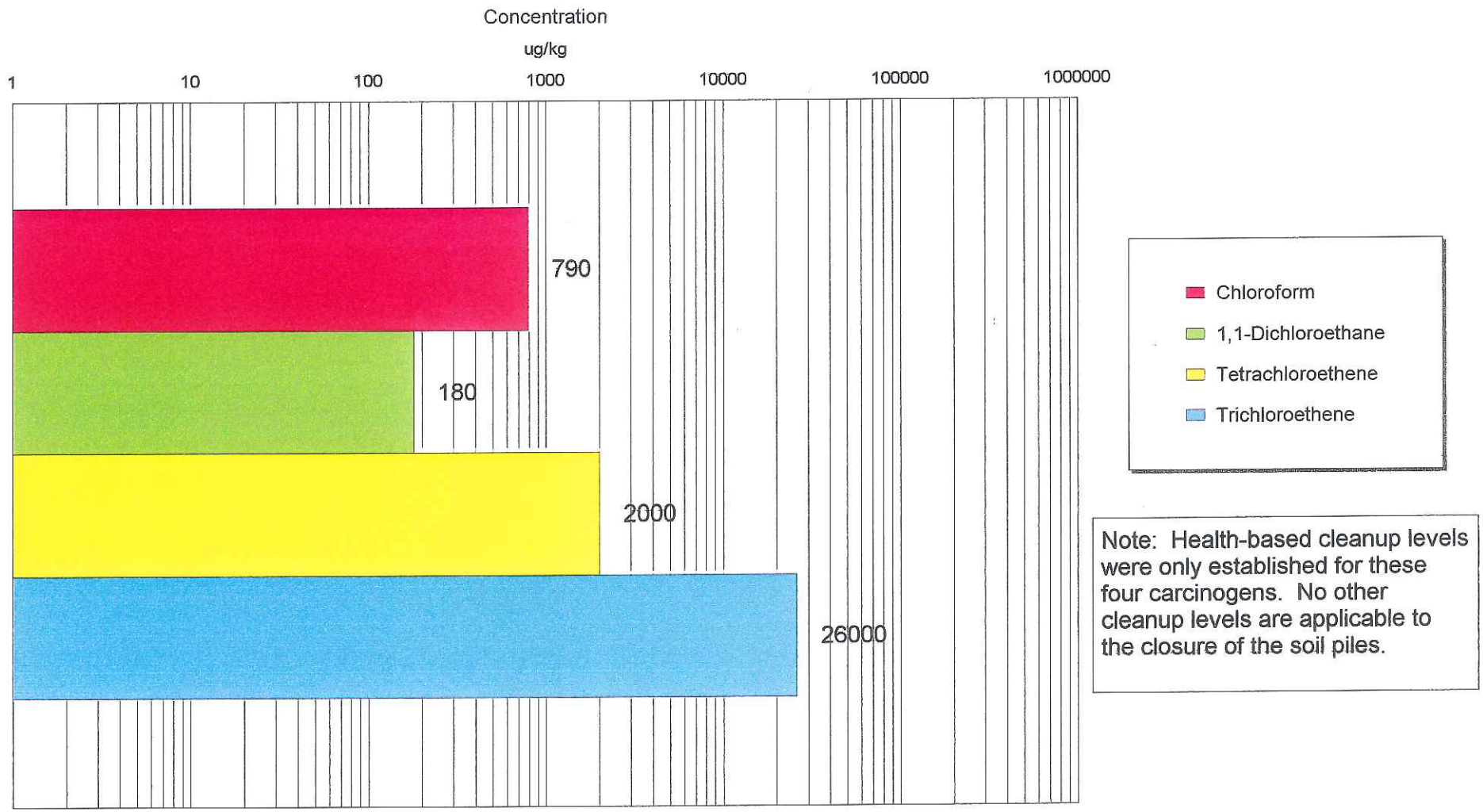


Figure 5. Risk-Based Cleanup Levels (RME Values)



Note: Health-based cleanup levels were only established for these four carcinogens. No other cleanup levels are applicable to the closure of the soil piles.

APPENDIX A

CLOSURE PLAN APPROVAL LETTER DATED JUNE 27, 1996

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Kathy Prosser
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

VIA CERTIFIED MAIL Z 339 776 297 June 27, 1996

Mr. Howard Johnston
CMW, Inc.
70 South Gray Street
P.O. Box 2266
Indianapolis, Indiana 46206

Re: Closure Plan Approval
Soil Waste Piles
CMW, Inc.
Indianapolis, Indiana
IND 089263412

Dear Mr. Johnston:

The partial closure plan dated January 5, 1996 for soil waste piles located at CMW, Inc. in Indianapolis has been approved with the enclosed modifications.

A public notice of the closure plan was published in the Indianapolis Star. The public comment period began on the date of publication, May 9, 1996 and ended on June 8, 1996. No comments were received.

Applicable closure activities must be completed in accordance with the approved plan within one-hundred eighty (180) days after the date of this approval letter. When closure is completed, the owner or operator must submit to the Commissioner certification in accordance with 40 CFR 270.11(d) and 40 CFR 264.115, both by the owner or operator and by an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan. The response must indicate the facility's desired future status. Mail your response and certification to:

Mr. Victor P. Windle, Chief
Hazardous Waste Permit Section
Hazardous Waste Facilities Branch
Solid and Hazardous Waste Management
Indiana Department of Environmental Management
100 North Senate Street
P.O. Box 6015
Indianapolis, Indiana 46206-6015

In addition, Section 206 of the Hazardous and Solid Waste Amendments of 1984 requires that corrective action be performed for all releases of hazardous waste or constituents from any solid waste management unit. The U.S. Environmental Protection Agency (U.S. EPA) has the authority to implement this provision; therefore, your company may still be subject to corrective action requirements.

If you wish to challenge this decision, IC 13-7-10-2.5 and IC 4-21.5-3-7 require that you file a Petition for Administrative Review. The petition may result in the scheduling of an administrative hearing. If you seek to have the effectiveness of the closure plan stayed during administrative review, you must also file a Petition for Stay. The petition(s) must be submitted to the Office of Environmental Adjudication at the address below within fifteen (15) days after your receipt of this notice. The petition(s) must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision, or otherwise entitled to review by law. Additionally, IC 13-7-10-2.5 requires that a petition for administrative review must:

1. State the name and address of the person making the request;

2. Identify the interest of the person making the request;

3. Identify any persons represented by the person making the request;

4. State the reasons, with particularity, for the request;

5. State the issues, with particularity, proposed for consideration at the hearing; and

6. Identify the terms of the closure plan which, in the judgement of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing licenses of the type granted or denied by the Commissioner.

Pursuant to IC 4-21.5-3-1(f), any document serving as a petition for review or review and stay must be filed with the Office of Environmental Adjudication. Filing of such a document is complete on the earliest of the following dates:

1. The date on which the petition is delivered to the Office of Environmental Adjudication, located at ISTA Building, Suite 618, 150 West Market Street, Indianapolis, Indiana 46204;

2. The date of the postmark on the envelope containing the petition, if the petition is mailed by United States mail; or

3. The date on which the petition is deposited with a private carrier, as shown by a receipt issued by the carrier, if the petition is sent by private carrier.

Please direct all questions regarding the closure process to Ms. Michelle Timmermann of my office at 317/232-3264.

Sincerely,

Thomas E. Linson, Chief
Hazardous Waste Facilities Branch
Solid and Hazardous Waste Management

mlt
Enclosure

cc: Mr. Hak Cho, U.S. EPA, Region 5 (with enclosure)
Ms. Laura Ciszewski, IDEM (with enclosure)
Marion County Health Department (with enclosure)
Mr. Joel Morbito, U.S. EPA, Region 5 (with enclosure)
Ms. Pam O'Rourke, IDEM (with enclosure)
Mr. Charles Grady, IDEM (with enclosure)

Contact Metals Welding, Inc.
Closure Plan Modifications
Indianapolis, Indiana
IND 089263412

1. All analytical results will be submitted to the IDEM and will include signed chain-of-custody sheets, sampling dates, analysis dates, analytical methods used, practical qantitation limits, and quality control results. The quality assurance/quality control (QA/QC) results will include tuning results (GC-MS), initial and continuing calibration results, blank results, matrix duplicate results, matrix spike/matrix spike duplicate results, and surrogate recoveries.

2. The horizontal extent of contamination of the soil waste piles, for the purpose of this closure, is assumed to be one foot around the soil piles as discussed in ATEC's July 7, 1995 letter to the IDEM.

3. If the soils are found to be above the risk based assessment cleanup levels, the soils will be excavated or remediated as hazardous waste.

APPENDIX B

LETTER TO IDEM FROM SECOR DATED FEBRUARY 22, 1996 REGARDING MODIFIED SAMPLING, ANALYSIS AND CLEANUP PLAN

SECOR
International Incorporated

February 22, 1996

Mr. Victor Windle
Indiana Department of Environmental Management
Office of Solid and Hazardous Waste Management
Plan Review and Permit Section
Room Number 1154N
100 North Senate Avenue
Indianapolis, Indiana 46206-6015

RE: Modified Sampling and Analysis Plan
CMW, Incorporated
70 South Gray Street
Indianapolis, Indiana
U.S. EPA I.D. Number IND 089 263 412

Dear Mr. Windle:

On behalf of Contacts Metals Welding, Incorporated ("CMW"), SECOR International Incorporated ("SECOR") is providing the Indiana Department of Environmental Management ("IDEM") with this letter regarding CMW's proposed plans for completion of the Modified Sampling, Analysis and Cleanup Plan ("MSACP") at the CMW facility on 70 South Gray Street, Indianapolis, Indiana. The IDEM is currently reviewing the Closure Plan submitted on January 5, 1996 for closure of the soil piles created during the implementation of the original Sampling, Analysis and Cleanup Plan in 1989.

Because sampling and analysis activities proposed to be conducted during the implementation of the soil pile Closure Plan currently under review will provide significant information regarding the nature and extent of the contamination which pre-existed the soil piles, it would be most beneficial to the creation of the MSACP to wait until after the soil pile closure activities have been completed. Therefore, it is proposed that the MSACP be submitted to the IDEM sixty (60) days after the soil pile closure has been certified.

To reiterate past discussions, CMW proposes to include the following key features in the MSACP: 1) delineation of the lateral and vertical extent of contamination in the subsoils; 2) the evaluation of potential impact of contaminants on groundwater quality; 3) the evaluation of the fate and transport properties of the contaminants in the soil and groundwater; and 4) evaluation of remedial measures necessary to minimize risk to human health and the environment posed by the on-site contamination studied. Further, CMW intends to structure this plan after the Indiana Voluntary Remediation Program in determining risk-based cleanup levels and developing remedial alternatives.

We hope this letter serves to communicate the direction CMW proposes to take with regard to the MSACP which will address the pre-existing contamination at CMW. We would appreciate your written approval of our proposed plans. If you have any specific questions regarding the proposed content of the closure plan, please do not hesitate to contact me at (317) 876-8375. We look forward to your response.

Sincerely,

SECOR International Incorporated

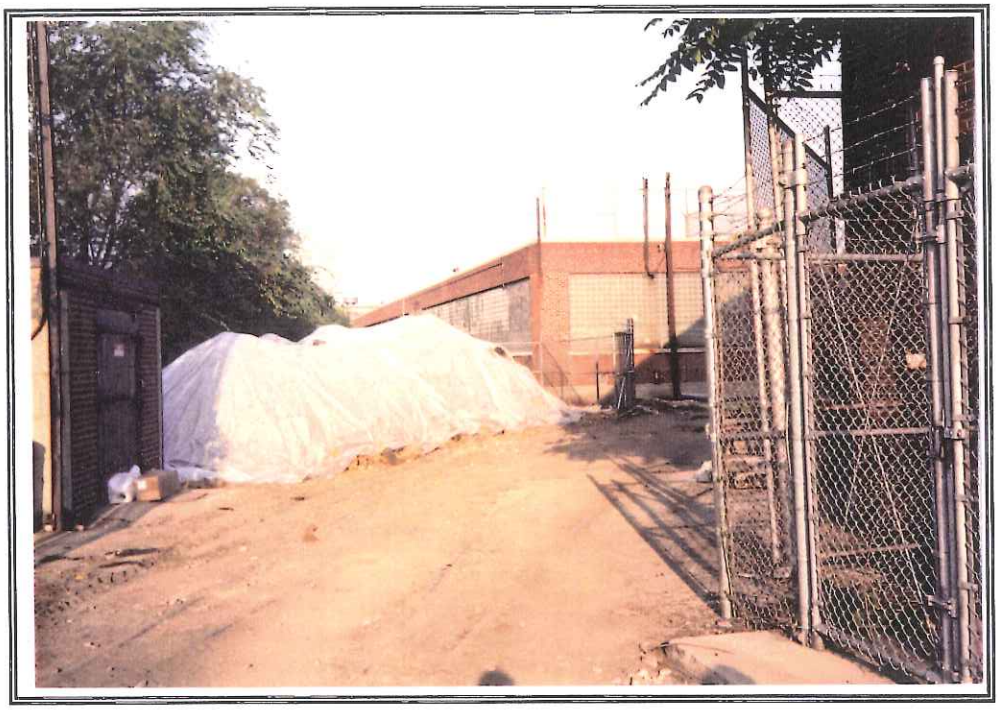
Gregory B. Byer, P.E., C.P.G.
Principal Engineer

cc: Mr. Howard Johnston, CMW, Inc.
Mr. Lewis Beckwith, Baker & Daniels
Mr. Mike Cunningham, U.S. EPA Region V

APPENDIX C

PHOTOGRAPHIC DOCUMENTATION OF SOIL REMOVAL ACTIVITIES

Photograph 1



Photograph 2

Photograph 3

Photograph 4

Photograph 5

Photograph 6

Photograph 7

Photograph 8

APPENDIX D

SPECIAL WASTE CERTIFICATION FOR DISPOSAL OF SOIL PILES

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Michael O'Connor
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

Office of Solid and Hazardous Waste Management
Special Waste Certification No. 60563

Pursuant to 329 IAC 10-8-8, the following generator:

CMW, Inc.
70 S. Gray Street
Indianapolis, IN 46206

has received certification from the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, for the following waste stream(s):

excavated soils containing less than 50ppm PCBs

These wastes may be disposed at any sanitary landfill specified under 329 IAC 10-8-2 as an acceptable site for the disposal of waste which is certified as a special waste. A list of acceptable disposal sites is available from the Solid Waste Permit Section at the above address or by calling 317/232-3111. General and Special Conditions that apply to this certification are indicated on the reverse side.

This certification shall expire exactly 5 years from the effective signature date below.

Gregory C. Lorenz

Gregory C. Lorenz, Chief
Special Waste Permit Section
Solid Waste Facilities Branch
Solid and Hazardous Waste Management

10/3/96
Date

General Conditions That Apply to All Special Waste Certifications:

1. The generator and/or the hauler shall provide the landfill with a copy of this certification along with advanced notification of intended disposal and provide a disposal notification form with each load disposed.
2. If nuisance or pollution conditions are created, immediate corrective action shall be taken.
3. Waste material(s) accepted under this certification shall be included on the Special Waste Monthly Report submitted to this Office by the landfill.
4. Special Waste(s) may not be disposed at any landfill subject to corrective action under 329 IAC 10-21-13 or at any landfill which fails to maintain compliance with 329 IAC 10.
5. It is the generator's responsibility to properly dispose of all wastes at acceptable sites. It is also the responsibility of the disposal site to notify the generators if the site's disposal status changes.
6. Any changes in the raw materials, the process(es) generating the waste, or the characteristics of the waste stream(s) shall be reported in writing to the IDEM and the disposal site prior to further disposal. If it is determined that the change is substantial, this certification shall be voided by written notification from IDEM.
7. The waste(s) shall not contain free liquids.
8. The waste(s) shall not present a fire or explosion hazard.

Special Conditions That Are Required For Disposal of the Waste(s) Will Be Indicated By The Reviewer's Initials:

_____1. A new TCLP shall be provided to the IDEM at the time of renewal of this certification. Each waste stream shall be analyzed separately.

_____2. In addition to landfills specified under 329 IAC 10-8-2, waste(s) specified on this certification may also be disposed pursuant to 329 IAC 10-8-9 at the following landfills(s):

JAW 3. This is an intended one-time only disposal. If the quantity disposed of substantially exceeds the amount anticipated, this Office shall be notified in accordance with General Condition Number 6.

Anticipated Disposal Quantity: 400 cubic yards annually

Reviewer/Date 10/2/96

cc: Mr. Howard Johnston: CMW, Inc., P.O. Box 2266, Indianapolis, IN 46206
Mr. Greg Byer: SECOR International, Inc., 8770 Guion Rd., Suite B., Indianapolis, IN 46268

APPENDIX E

SOIL BORING LOCATION SELECTION PROCEDURES

Selection of Randomly Selected Soil Borings Locations
Soil Pile Disposal Project, CMW, Inc.

Locations Selected using QUICKBASIC Programs (copy of code is attached)

Pile No.1

Pile is roughly 60' by 30' and was divided into 4 sectors

Pile 1, Sector 1 (GP96-P1-1)

X LINES = 17 Y LINES = 9
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
~~1~~	~~2~~	~~7~~	outlier, outside pile margin
2	**12**	**4**	location acceptable, used as boring location
3	5	6	not used
4	10	0	not used
5	0	1	not used
6	4	8	not used

Pile 1, Sector 2 (GP96-P1-2)

X LINES = 17 Y LINES = 9
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
1	**7**	**5**	location acceptable, used as boring location
2	8	7	not used
3	1	6	not used
4	6	7	not used
5	11	2	not used
6	7	4	not used

Pile 1, Sector 3 (GP96-P1-3)

X LINES = 17 Y LINES = 9
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
~~1~~	~~2~~	~~3~~	outlier, outside pile margin
2	**12**	**8**	location acceptable, used as boring location
3	1	4	not used
4	6	7	not used
5	4	5	not used
6	1	3	not used

Selection of Randomly Selected Soil Borings Locations
Soil Pile Disposal Project, CMW, Inc.

Pile 1, Sector 4 (GP96-P1-4)

X LINES = 17 Y LINES = 9
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
1	14	7	location acceptable, used as boring location
2	2	1	not used
3	7	4	not used
4	12	2	not used
5	4	5	not used
6	4	6	not used

Pile No.2

Pile is roughly 162' by 12' and was divided into 5 sectors

Pile 2, Sector 1 (GP96-P2-1)

X LINES = 18 Y LINES = 13
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
1	6	8	location acceptable, used as boring location
2	14	10	not used
3	15	7	not used
4	9	8	not used
5	9	2	not used
6	13	1	not used

Pile 2, Sector 2 (GP96-P2-2)

X LINES = 18 Y LINES = 13
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
1	1	5	location acceptable, used as boring location
2	15	3	not used
3	14	0	not used
4	1	1	not used
5	16	11	not used
6	1	7	not used

Selection of Randomly Selected Soil Borings Locations
Soil Pile Disposal Project, CMW, Inc.

Pile 2, Sector 3 (GP96-P2-3)

X LINES = 18 Y LINES = 13
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
~~1~~	~~5~~	~~12~~	outlier, outside pile margin
2	**13**	**6**	location acceptable, used as boring location
3	9	3	not used
4	16	9	not used
5	15	10	not used
6	4	6	not used

Pile 2, Sector 4 (GP96-P2-4)

X LINES = 18 Y LINES = 13
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
1	**0**	**5**	location acceptable, used as boring location
2	4	3	not used
3	5	12	not used
4	2	9	not used
5	4	11	not used
6	6	12	not used

Pile 2, Sector 5 (GP96-P2-5)

X LINES = 18 Y LINES = 13
NUMBER OF LOCATIONS = 6

LOCATION#	X	Y	
~~1~~	~~4~~	~~0~~	outlier, outside pile margin
~~2~~	~~12~~	~~2~~	outlier, outside pile margin
3	**15**	**5**	location acceptable, used as boring location
4	15	10	not used
5	4	1	not used
6	16	6	not used

Selection of Randomly Selected Soil Borings Locations
Soil Pile Disposal Project, CMW, Inc.

Program Code for QUICKBASIC Programs Used to Generate Random Coordinates

```
     'This basic program calculates random pairs of grid coordinates
     '
     '
     '
     L1 = 1
     CLS
     'Set-up path, file, and output information
     INPUT "TYPE THE PATH NAME FOR THE OUTPUT DATA FILE (E.G., A:\)"; PATH$
     INPUT "TYPE THE NAME OF THE OUTPUT FILE (W/O EXTENSION)"; FLOUT$
     OPEN PATH$ + FLOUT$ + ".DAT" FOR OUTPUT AS #1
     CLS
     PRINT "DO YOU WANT TO SEND THE RESULTS TO A PRINTER (Y OR N)"
100  ANS$ = INKEY$
     IF ANS$ = "" GOTO 100
     IF ANS$ <> "Y" AND ANS$ <> "y" AND ANS$ <> "N" AND ANS$ <> "n" GOTO 100
     IF ANS$ = "N" OR ANS$ = "n" THEN L1 = 0
     CLS
     IF L1 = 1 THEN PRINT "<MAKE SURE PRINTER IS READY!!!/ PRESS SPACE BAR TO CONTINUE>" ELSE GOTO
300
200  PRANZ$ = INKEY$
     IF PRANZ$ = "" GOTO 200
     IF PRANZ$ <> " " GOTO 200
     '
     'Set-up grid specs and initialize timer
300       RANDOMIZE TIMER
          INPUT "HOW MANY LOCATIONS ARE TO BE SAMPLED"; NUM
          CLS
          INPUT "HOW MANY LINES DO YOU WANT IN THE X DIRECTION"; XLINES
```

Selection of Randomly Selected Soil Borings Locations
Soil Pile Disposal Project, CMW, Inc.

```
     CLS
     INPUT "HOW MANY LINES DO YOU WANT IN THE Y DIRECTION"; YLINES
PRINT #1, "X LINES ="; XLINES; "   Y LINES ="; YLINES
PRINT #1, "NUMBER OF LOCATIONS ="; NUM
PRINT #1, " LOCATION#     X      Y"
PRINT #1, "------------------------"
IF ANS$ = "Y" OR ANS$ = "y" THEN LPRINT , "X LINES ="; XLINES; "   Y LINES ="; YLINES
IF ANS$ = "Y" OR ANS$ = "y" THEN LPRINT , "NUMBER OF LOCATIONS ="; NUM
IF ANS$ = "Y" OR ANS$ = "y" THEN LPRINT , " LOCATION#     X      Y"
IF ANS$ = "Y" OR ANS$ = "y" THEN LPRINT , "------------------------"
     'Begin Calculation of random numbers
     FOR I = 1 TO NUM
          X = INT(RND * XLINES)
          Y = INT(RND * YLINES)
          PRINT #1, USING "  ###         ##     ##"; I; X; Y
          IF ANS$ = "Y" OR ANS$ = "y" THEN LPRINT , USING "  ###         ##     ##"; I; X; Y
     NEXT I
PRINT #1, CHR$(12)
IF ANS$ = "Y" OR ANS$ = "y" THEN LPRINT CHR$(12) 'form feed
END
```

APPENDIX F

SOIL BORING DESCRIPTIVE LOGS

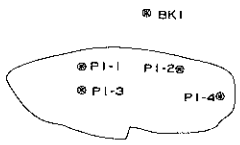
SECOR
BORING/MONITORING WELL LOG

DATE: 10/15/96	SECOR PROJECT NUMBER: R0054-001-01	MONITORING WELL/ BORING NUMBER: GP96-P1-1	PAGE: 1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD: GEOPROBE	SOIL SAMPLING METHOD: MACRO CORE		
DRILLING COMPANY: PARAMOUNT	DRILLING START: 14:30	DRILLING FINISH: 14:40	DEPTH TO WATER DURING DRILLING: NA
BORING BACKFILL MATERIAL: BENTONITE	BORING LOGGED BY: PATRICK BRENNAN		DEPTH TO WATER AFTER WELL SET: NA

LOCATION SKETCH



DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
1		3	D	0	278	0-1' FILL, 10YR 2/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND, 15% FINE SAND, 55% SILT, LOOSE, LOW PLASTICITY, 50% COAL PIECES AND CINDERS.
					921	
					512	1-3' CLAY LOAM, 7.5YR 4/1, DARK GRAY, 30% CLAY, 20% FINE SAND, 50% SILT, SOFT, VERY COHESIVE, HIGH PLASTICITY, ODOR.
2					48	
				0	ND	
3			M			
		2			15	3-5' SILT LOAM, 2.5Y 4/3, OLIVE BROWN, 20% CLAY, 30% FINE SAND, 50% SILT, SOFT, COHESIVE, MEDIUM PLASTICITY.
4					ND	
5						END OF BORING 5 FEET SAMPLING BEGAN BELOW CONCRETE (APPROXIMATELY 0.5 FEET BELOW SURFACE)

CHECKED BY: G. BYER DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL08

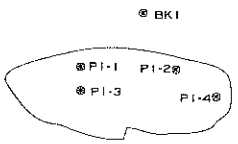
ECOR
BORING/MONITORING WELL LOG

DATE: 10/15/96	SECOR PROJECT NUMBER: R0054-001-01	MONITORING WELL/ BORING NUMBER: GP96-P1-2	PAGE: 1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD: GEOPROBE	SOIL SAMPLING METHOD: MACRO CORE		
DRILLING COMPANY: PARAMOUNT	DRILLING START: 14:40	DRILLING FINISH: 14:50	DEPTH TO WATER DURING DRILLING: NA
BORING BACKFILL MATERIAL: BENTONITE	BORING LOGGED BY: PATRICK BRENNAN		DEPTH TO WATER AFTER WELL SET: NA

LOCATION SKETCH



DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (ug/kg)	DESCRIPTION
0		3	D	2	235,000	0-1' FILL, 10YR 4/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND, 15% FINE SAND, 55% SILT, LOOSE, LOW PLASTICITY, 50% COAL PIECES AND CINDERS.
					292,000	
1					231	1-3' CLAY LOAM, 7.5YR 4/1, DARK GRAY, 30% CLAY, 20% FINE SAND, 50% SILT, SOFT, VERY COHESIVE, HIGH PLASTICITY, ODOR.
				2	39	
2			M		24	
3		2		3	9.9	3-5' CLAY LOAM, 7.5YR 5/1, GRAY, 30% CLAY, 20% FINE SAND, 50% SILT, SOFT, VERY COHESIVE, LOW PLASTICITY, ODOR.
4					7.6	
5						END OF BORING 5 FEET SAMPLING BEGAN BELOW CONCRETE (APPROXIMATELY 0.5 FEET BELOW SURFACE)

CHECKED BY: G. BYER DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL07

ECOR

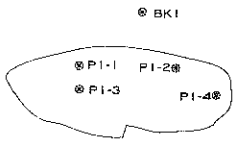
BORING/MONITORING WELL LOG

DATE: 10/15/96	SECOR PROJECT NUMBER: R0054-001-01	MONITORING WELL/ BORING NUMBER: GP96-P1-3	PAGE: 1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD: GEOPROBE	SOIL SAMPLING METHOD: MACRO CORE		
DRILLING COMPANY: PARAMOUNT	DRILLING START: 14:50	DRILLING FINISH: 15:00	DEPTH TO WATER DURING DRILLING: NA
BORING BACKFILL MATERIAL: BENTONITE	BORING LOGGED BY: PATRICK BRENNAN		DEPTH TO WATER AFTER WELL SET: NA

LOCATION SKETCH



DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		3	M	0	1,117	0-1.25' CLAY LOAM, 10YR 2/1, BLACK, 30% CLAY, 25% FINE SAND, 45% SILT, SOFT, COHESIVE, MEDIUM PLASTICITY.
1					89	
					24	1.25-5' SILTY CLAY LOAM, 10YR 3/4, DARK YELLOWISH BROWN, 30% CLAY, 15% FINE SAND, 55% SILT, MEDIUM COHESIVE, VERY STIFF, MEDIUM PLASTICITY.
2			M	0	17	
					21	
3		2			6.9	
4					95	
5						END OF BORING 5 FEET SAMPLING BEGAN BELOW CONCRETE (APPROXIMATELY 0.5 FEET BELOW SURFACE)

CHECKED BY: G. BYER DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL09

ECOR
BORING/MONITORING WELL LOG

DATE	SECOR PROJECT NUMBER	MONITORING WELL/ BORING NUMBER	PAGE
10/15/96	R0054-001-01	GP96-P1-4	1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

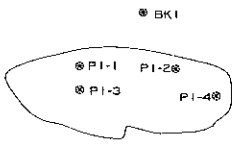
☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD	SOIL SAMPLING METHOD
GEOPROBE	MACRO CORE

DRILLING COMPANY	DRILLING START	DRILLING FINISH	DEPTH TO WATER DURING DRILLING
PARAMOUNT	15:00	15:10	NA

BORING BACKFILL MATERIAL	BORING LOGGED BY	DEPTH TO WATER AFTER WELL SET
BENTONITE	PATRICK BRENNAN	NA

LOCATION SKETCH



DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		4	D	0	418	0-1' FILL, 10YR 2/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND, 15% FINE SAND, 55% SILT, LOOSE, LOW PLASTICITY, 50% COAL PIECES AND CINDERS.
					2,492	
1		1	M	0	96,310	1-5' SILTY CLAY LOAM, 10YR 3/4, DARK YELLOWISH BROWN, 30% CLAY, 15% FINE SAND, 65% SILT, COHESIVE, VERY STIFF, MEDIUM PLASTICITY.
					314,800	
2					41	
3					9.8	
4					18	
5						END OF BORING 5 FEET SAMPLING BEGAN BELOW CONCRETE (APPROXIMATELY 0.5 FEET BELOW SURFACE)

CHECKED BY: G. BYER DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL10

ECOR

BORING/MONITORING WELL LOG

DATE	SECOR PROJECT NUMBER	MONITORING WELL/ BORING NUMBER	PAGE
10/15/96	R0054-001-01	GP96-BK-1	1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD	SOIL SAMPLING METHOD	LOCATION SKETCH
GEOPROBE	MACRO CORE	⊗ BK1; ⊗ P1-1, P1-2⊗, ⊗ P1-3, P1-4⊗

DRILLING COMPANY	DRILLING START	DRILLING FINISH	DEPTH TO WATER DURING DRILLING
PARAMOUNT	15:15	15:25	NA

BORING BACKFILL MATERIAL	BORING LOGGED BY	DEPTH TO WATER AFTER WELL SET
BENTONITE	PATRICK BRENNAN	NA

DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		4	D	0	199,600	0-6" FILL, 10YR 2/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND, 15% FINE SAND, 55% SILT, LOOSE, LOW PLASTICITY, 50% COAL PIECES AND CINDERS.
			M	0	399,200	6"-5' SILT LOAM, 2.5YR 4/4, OLIVE BROWN, 20% CLAY, 30% FINE SAND, 50% SILT, COHESIVE, MEDIUM PLASTICITY, MEDIUM STIFF.
1					535	
					262	
2					367	
3					17,840	
4		1			272	
5						END OF BORING 5 FEET SAMPLING BEGAN BELOW CONCRETE (APPROXIMATELY 0.5 FEET BELOW SURFACE)

CHECKED BY: G. BYER DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL11

SECOR

BORING/MONITORING WELL LOG

DATE: 10/15/96	SECOR PROJECT NUMBER: R0054-001-01	MONITORING WELL/ BORING NUMBER: GP96-P2-1	PAGE: 1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD: GEOPROBE	SOIL SAMPLING METHOD: MACRO CORE		
DRILLING COMPANY: PARAMOUNT	DRILLING START: 14:00	DRILLING FINISH: 14:10	DEPTH TO WATER DURING DRILLING: NA
BORING BACKFILL MATERIAL: BENTONITE	BORING LOGGED BY: PATRICK BRENNAN		DEPTH TO WATER AFTER WELL SET: NA

LOCATION SKETCH

DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		4	D		3.8	0-3.25' FILL, 10YR 2/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND, 15% FINE SAND, 55% SILT, 50% COAL AND CINDERS, LOOSE, NON COHESIVE, LOW PLASTICITY.
1					9.2	
					36	
					146	
2					66	
3			M	O	ND	3.25-4' SILT LOAM, 2.5Y 5/2, GRAYISH BROWN, 15% FINE SAND, 20% CLAY, 65% SILT, VERY STIFF, MEDIUM COHESIVE, MEDIUM PLASTICITY, 5% BLACK STAINING.
4		1		O	ND	4-5' SILTY CLAY LOAM, 10YR 4/2, BROWN, 15% FINE SAND, 30% CLAY, 55% SILT, VERY STIFF, COHESIVE, HIGH PLASTICITY.
5						END OF BORING 5 FEET SAMPLING BEGAN ON SURFACE

CHECKED BY: GB DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL01

SECOR

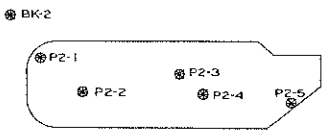
BORING/MONITORING WELL LOG

DATE	SECOR PROJECT NUMBER	MONITORING WELL/ BORING NUMBER	PAGE
10/15/96	R0054-001-01	GP96-P2-2	1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD	SOIL SAMPLING METHOD
GEOPROBE	MACRO CORE

LOCATION SKETCH



DRILLING COMPANY	DRILLING START	DRILLING FINISH	DEPTH TO WATER DURING DRILLING
PARAMOUNT	13:50	14:00	NA

BORING BACKFILL MATERIAL	BORING LOGGED BY	DEPTH TO WATER AFTER WELL SET
BENTONITE	PATRICK BRENNAN	NA

DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		4	D		280	0-3.25' FILL, 10YR 2/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND 15% FINE SAND, 55% SILT, 50% COAL AND CINDERS, LOOSE, NON COHESIVE, LOW PLASTICITY.
					222	
1					100	
					39	
2					18	
3			M		ND	3.25-4' SILT LOAM, 2.5Y 4/1, DARK GRAY, 15% FINE SAND, 25% CLAY, 60% SILT, STIFF, VERY COHESIVE, HIGH PLASTICITY, BLACK STAINING FROM 3.25-3.5 FEET.
4		1	M		ND	4-5' SILTY CLAY, 10YR 4/4, DARK YELLOWISH BROWN, 15% FINE SAND, 45% CLAY, 40% SILT, SOFT, VERY COHESIVE, HIGH PLASTICITY.
5						END OF BORING 5 FEET SAMPLING BEGAN ON SURFACE

CHECKED BY: GB DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL02

SECOR

BORING/MONITORING WELL LOG

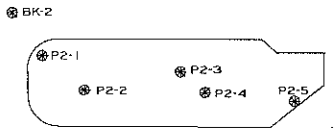
DATE	SECOR PROJECT NUMBER	MONITORING WELL/ BORING NUMBER	PAGE
10/15/96	R0054-001-01	GP96-P2-3	1

WEATHER CONDITIONS	CLIENT	SITE LOCATION
CLEAR, SUNNY	CMW, INC.	INDIANAPOLIS, INDIANA

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD	SOIL SAMPLING METHOD
GEOPROBE	MACRO CORE

LOCATION SKETCH



DRILLING COMPANY	DRILLING START	DRILLING FINISH	DEPTH TO WATER DURING DRILLING
PARAMOUNT	13:40	13:50	NA

BORING BACKFILL MATERIAL	BORING LOGGED BY	DEPTH TO WATER AFTER WELL SET
BENTONITE	PATRICK BRENNAN	NA

DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		4	D		450	0-2.5' FILL, 10YR 2/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND 15% FINE SAND, 55% SILT, 50% COAL AND CINDERS, LOOSE, NON COHESIVE, LOW PLASTICITY
					96	
1					14	
					169	
2						
				0	3.9	
						2.5-4' SILT LOAM, 2.5Y 4/1, DARK GRAY, 15% FINE SAND, 25% CLAY, 60% SILT, STIFF, VERY COHESIVE, HIGH PLASTICITY, BLACK STAINING FROM 2.5-3.5 FEET.
3			M			
					11	
				0		
4						
					ND	4-5' SILTY CLAY, 2.5Y 4/4, OLIVE BROWN, 20% MEDIUM-FINE SAND, 40% CLAY, 40% SILT, SOFT, VERY COHESIVE, HIGH PLASTICITY.
		1	M	0		
5						END OF BORING 5 FEET SAMPLING BEGAN ON SURFACE

CHECKED BY: GB DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL03

SECOR

BORING/MONITORING WELL LOG

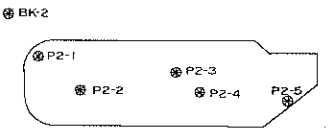
DATE: 10/15/96	SECOR PROJECT NUMBER: R0054-001-01	MONITORING WELL/ BORING NUMBER: GP96-P2-4	PAGE: 1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD: GEOPROBE

SOIL SAMPLING METHOD: MACRO CORE

LOCATION SKETCH



DRILLING COMPANY: PARAMOUNT

DRILLING START: 13:20

DRILLING FINISH: 13:30

DEPTH TO WATER DURING DRILLING: NA

BORING BACKFILL MATERIAL: BENTONITE

BORING LOGGED BY: PATRICK BRENNAN

DEPTH TO WATER AFTER WELL SET: NA

DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		4	D		483	0-3' FILL, 10YR 2/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND 15% FINE SAND, 55% SILT, 50% COAL AND CINDERS, LOOSE, NON COHESIVE, LOW PLASTICITY.
					174	
1					28	
					30	
2					50	
3			M	O	41	3-4' SILT LOAM, 10Y 5/1, GRAY, 10% FINE SAND, 20% CLAY, 70% SILT, MEDIUM STIFF, COHESIVE, MEDIUM PLASTICITY.
4		1	M	O	ND	4-5' SILTY CLAY, 10YR 3/4, DARK YELLOWISH BROWN, 15% FINE SAND, 45% CLAY, 40% SILT, SOFT, VERY COHESIVE, HIGH PLASTICITY.
5						END OF BORING 5 FEET SAMPLING BEGAN ON SURFACE

CHECKED BY: GB DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL04

SECOR
BORING/MONITORING WELL LOG

DATE	SECOR PROJECT NUMBER	MONITORING WELL/ BORING NUMBER	PAGE
10/15/96	R0054-001-01	GP96-P2-5	1
WEATHER CONDITIONS	**CLIENT**	**SITE LOCATION**	
CLEAR, SUNNY	CMW, INC.	INDIANAPOLIS, INDIANA	

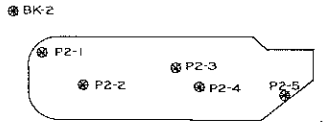
☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD	SOIL SAMPLING METHOD
GEOPROBE	MACRO CORE

DRILLING COMPANY	DRILLING START	DRILLING FINISH	DEPTH TO WATER DURING DRILLING
PARAMOUNT	13:10	13:17	NA

BORING BACKFILL MATERIAL	BORING LOGGED BY	DEPTH TO WATER AFTER WELL SET
BENTONITE	PATRICK BRENNAN	NA

LOCATION SKETCH



DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		4	D		5.4	0-2'10" FILL, 10YR 2/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND 15% FINE SAND, 55% SILT, 50% COAL AND CINDERS, LOW PLASTICITY, LOOSE.
1					ND	
					ND	
				0	ND	
2					ND	
3		1	M		ND	2'10"-5' CLAY, 10YR 4/3, BROWN, 45% CLAY, 35% SILT, 10% FINE SAND, MEDIUM STIFF, COHESIVE, HIGH PLASTICITY.
4				0	ND	
5						END OF BORING 5 FEET SAMPLING BEGAN ON SURFACE

CKED BY:GB DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL05

SECOR

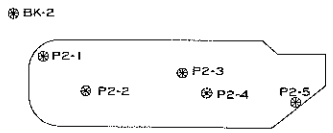
BORING/MONITORING WELL LOG

DATE: 10/15/96	SECOR PROJECT NUMBER: R0054-001-01	MONITORING WELL/ BORING NUMBER: GP96-BK-2	PAGE: 1
WEATHER CONDITIONS: CLEAR, SUNNY	CLIENT: CMW, INC.	SITE LOCATION: INDIANAPOLIS, INDIANA	

☒ SOIL BORING ONLY
☐ SOIL BORING COMPLETED AS MONITORING WELL

DRILLING METHOD: GEOPROBE	SOIL SAMPLING METHOD: MACRO CORE		
DRILLING COMPANY: PARAMOUNT	DRILLING START: 14:10	DRILLING FINISH: 14:20	DEPTH TO WATER DURING DRILLING: NA
BORING BACKFILL MATERIAL: BENTONITE	BORING LOGGED BY: PATRICK BRENNAN		DEPTH TO WATER AFTER WELL SET: NA

LOCATION SKETCH



DEPTH (IN FEET)	BLOW COUNTS PER 0.5 FEET	RECOVERY (FEET)	MOISTURE CONTENT	PID/FID (PPMV)	TOTAL VOCs (UG/KG)	DESCRIPTION
0		4	D		3.4	0-3.5 FILL, 10YR 4/1, BLACK, 5% FINE GRAVEL, 10% COARSE SAND, 15% MEDIUM SAND, 15% FINE SAND, 55% SILT, LOOSE, LOW PLASTICITY, 50% COAL PIECES AND CINDERS.
1					ND	
					ND	
					ND	
2					ND	
3					ND	
			M	O		3.5-4' SILT LOAM, 10YR 5/1, GRAY, 10% FINE SAND, 5% MEDIUM SAND, 20% CLAY, 65% SILT, VERY STIFF, MEDIUM PLASTICITY, MEDIUM COHESIVE.
4		1				4-5' SILTY CLAY, 10YR 4/4, DARK YELLOWISH BROWN, 40% SILT, 45% CLAY, 15% FINE SAND, VERY COHESIVE, HIGH PLASTICITY, STIFF.
			M	O	ND	
5						END OF BORING 5 FEET SAMPLING BEGAN ON SURFACE

CHECKED BY: G. BYER DATE: 2/10/97 ▽ INITIAL WATER LEVEL ▼ STATIC WATER LEVEL

540101BL08